THE CITY WILD:

Urban Biodiversity

from A to Z

DESIGN AND ILLUSTRATION BY

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CONTENT BY

Ateneo Institute of Sustainability

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Forest Foundation Philippines
Let's grow together.

Foreword

Urban green spaces are pockets of nature in the city, which are partly or completely covered by grass, trees, and any kind of vegetation. These may be patches of land, like city parks, cemeteries, school campuses, private gardens, and vacant lots; and they may host a wide variety of plant and animal life. These also provide ecosystem services, such as purifying the air, absorbing excess rain water, growing food, controlling pests, and cooling down the surroundings, and are valuable for nature education. Spending time in our urban green spaces also has mental, spiritual, and recreational benefits, and provides an opportunity to cultivate wonder and awe for the natural world, especially for young Filipinos!

This alphabet flash card set features examples of Philippine urban wildlife and concepts to help young learners get to know and appreciate our rich local flora and fauna, even in the city! The City Wild provides a hands-on educational experience with each card featuring an organism, concept, or physical component of urban biodiversity, an eye catching illustration, a short description, and an activity that children and their parents or teachers can enjoy together.

We hope you have fun learning new words and knowing more about the wildlife around us through these colorful and educational cards. This is a collaborative effort to raise awareness for the protection and conservation of urban

Want to help spread the appreciation for urban green spaces?

Take photos of your activities and output and share them with your family and friends by using the hashtags below, and tagging us!

#TheCityWildPH
#UrbanBiodiversityPH

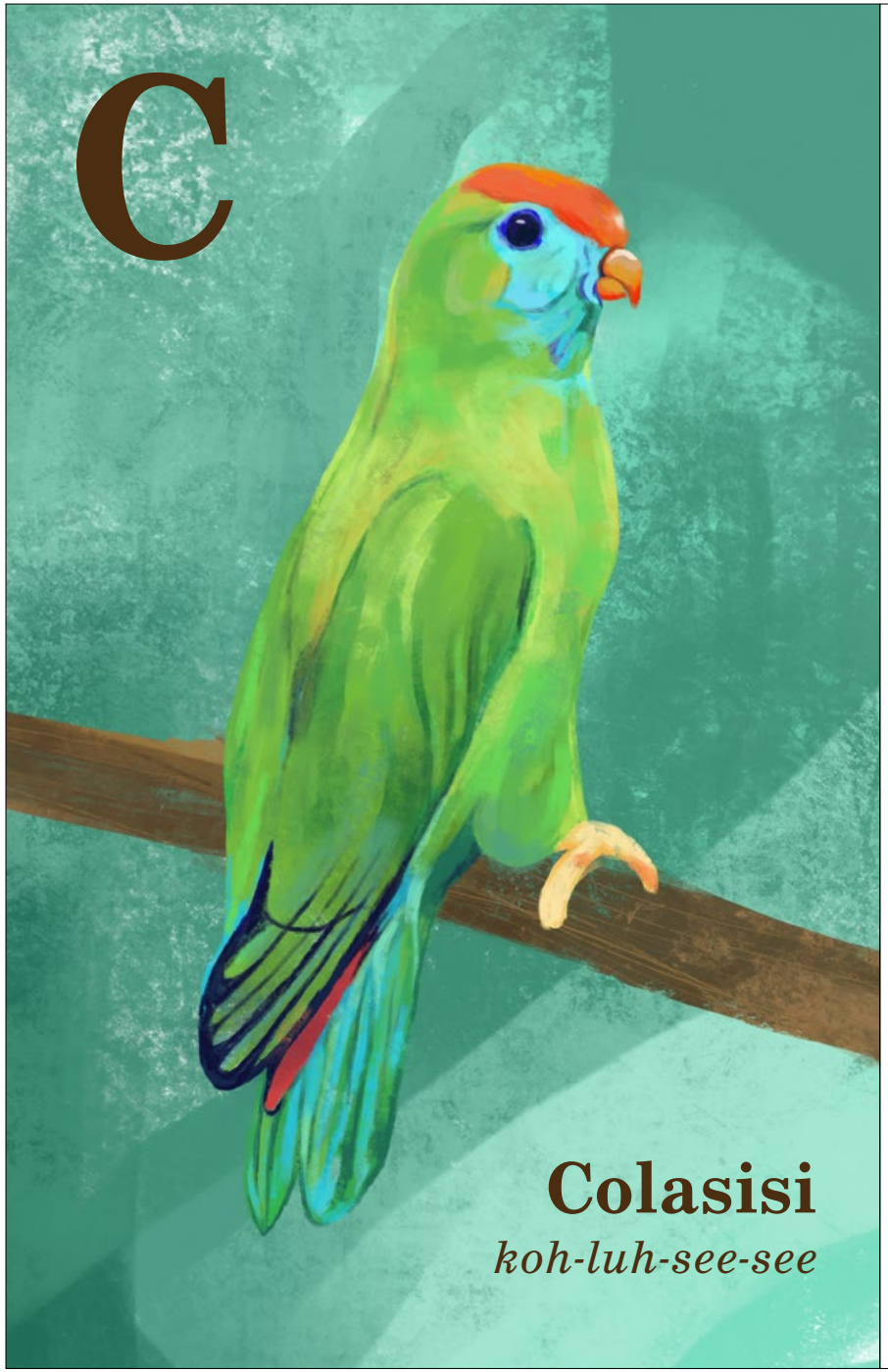
Nature uses color in many different ways, sometimes it is used to blend in (camouflage) and sometimes it is used to stand out or to send a signal. **Aposematic** animals use bright colors to advertise to their predators that they have defense mechanisms such as toxins, stingers, and other weapons.

Suggested Activity: Design, draw, and color your own aposematic insect! Explain why you chose those colors and what they signify.

Biodiversity is the variety of all living things: all kinds of plants, animals, fungi, and bacteria. Biodiversity also includes their genetic differences and the different kinds of ecosystems in which they live. We depend on biodiversity for most of our needs, such as food, clothing, and medicine. Biodiversity also plays a big part in keeping our air and water clean, and our soil healthy!

The Filipino translation for biodiversity is samu't saring buhay or saribuhay.

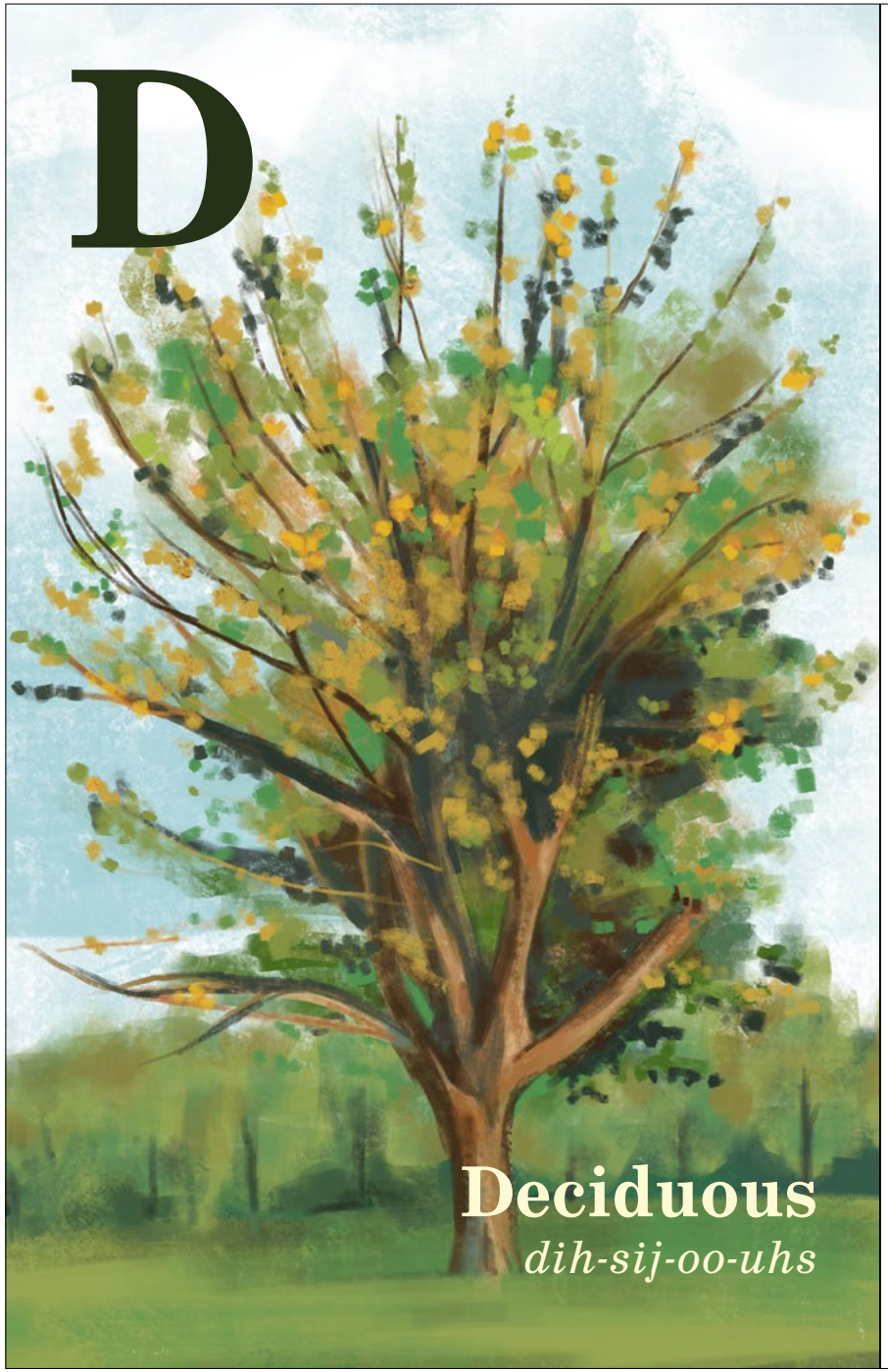
Suggested Activity: Go outside and identify the different organisms around you. What roles do you think these organisms play?



The **Colasisi** *(Loriculus philippensis)* is a species of parrot. It has bright green feathers with an orange spot on its forehead. It also has bright blue feathers under its wings and on its tail. The Colasisi on this card is a female because she does not have an orange patch on her chest, which males have.

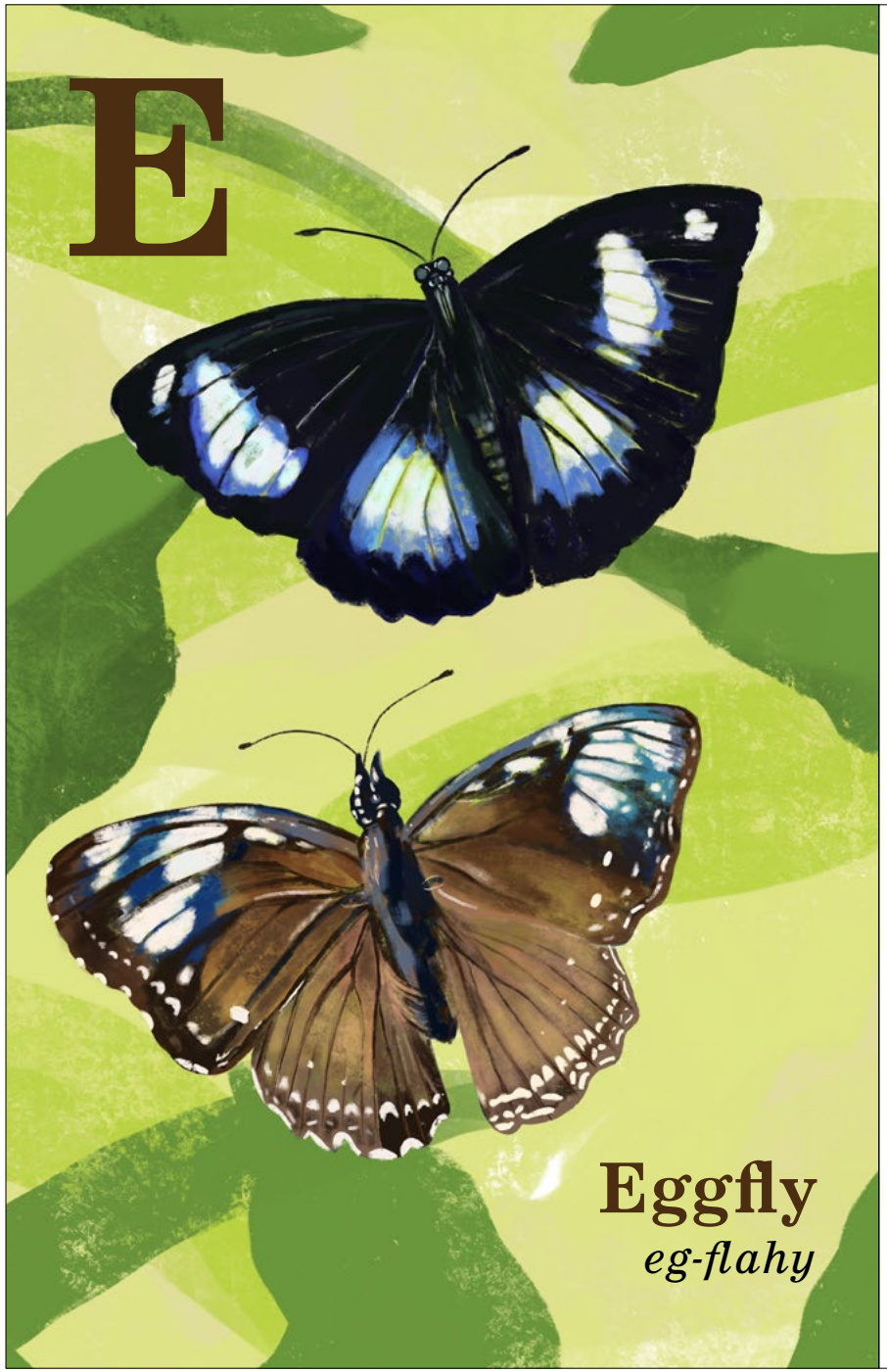
It is also known as the Philippine Hanging Parrot because it likes to grab onto branches and hang upside down!

Suggested Activity: The Colasisi is a pretty bird, which is why they are often caught in the wild and sold in the pet trade. Fortunately, the Wildlife Resources Conservation and Protection Act is a law that helps protect the Colasisi and other wildlife. Make a poster featuring the Colasisi, and why it should not be caught and sold in the pet trade.



Trees and plants that shed their leaves seasonally are called **deciduous.** Deciduous trees are often associated with the temperate parts of the world, where leaves are lost before the winter. In the tropics, this usually happens at the start of the dry season. Since water escapes from the surface of leaves, having fewer leaves helps the tree conserve water. Our national tree, the **Narra** *(Pterocarpus indicus)*, is a deciduous tree.

Suggested Activity: Try out some Leaf Rubbing! Collect fallen leaves outside and put it bottom side up underneath a paper. Rub a crayon or pencil over the entire leaf and watch as all of the leaf's details appear on the page. Can you name the parts of the leaf and find out what their functions are?



The **Great Eggfly** *(Hypolimnas bolina)* has beautiful black wings with blue markings - which is why it is also known as the Blue Moon Butterfly. These butterflies are very active fliers and are known to be territorial. Like other butterflies, they like to sip sugary nectar from flowers. If you see them perched on the ground, they are probably sipping salt and other important minerals from the soil. The Great Eggfly butterflies are more common during the rainy season and tend to be found where there are flowers or fallen fruit on the ground.

Suggested Activity: Collect empty tissue paper rolls and other scrap materials around your house to make your own Eggfly! Can you identify its parts, such as the head, antennae, forewings, hindwings, thorax, and abdomen?

There are many different species of bats in the city. One of them is the fruit bat, named so because their favorite food is fruit! **The Lesser Dog-faced Fruit Bat** *(Cynopterus brachyotis)* is an example, and may be found resting under the roof of buildings or in tree hollows. In the evening, they fly far from their roosts to search for fruits, like Talisay *(Terminalia catappa)*, Bitaog *(Calophyllum inophyllum)*, and Figs *(Ficus sp.)*.

Fruit bats are important pollinators, and help plants and trees grow by spreading seeds to surrounding gardens and parks.

Suggested Activity: Write a short story about a fruit bat and how it helps keep urban ecosystems in balance.

Geckos are lizards that belong to the Gekkonidae family. They are usually nocturnal and are known for their vocalizations and their ability to cling to smooth surfaces, like ceilings and walls. An example is the **Common House Gecko** *(Hemidactylus sp.),* also known as the **Butiki**, commonly found in urban areas. In the wilder parts of the city where there is a lot of vegetation, you may also find the **Tokay Gecko** *(Gecko gecko)* or the **Tuko**. Geckos eat insects and help control pest populations.

Suggested Activity: Make your own wall decoration by drawing a Butiki/Common House Gecko and Tuko/Tokay Gecko on a piece of cardboard. Don't forget the details, like their big toes for clinging to walls. You can even draw some insects for them to eat, too!

H

Hemimetabolism

He-mee-muh-tab-uh-liz-uhm

Also known as incomplete metamorphosis, **hemimetabolism** is an insect development process where there is no pupal stage. The insect develops from egg to nymph to imago (or adult) form. Dragonflies, cockroaches, and grasshoppers are examples of hemimetabolous insects.

Suggested Activity: Draw the life cycle of a butterfly, which shows complete metamorphosis, and compare it to the hemimetabolous life cycle on this card.

Invasive species are organisms that belong to another country, but were introduced to where it is now. They are usually escaped pets or plants that are hardy and often more aggressive than our native species, so they grow and spread faster. The **Cane Toad** *(Rhinella marina)* is an example of a species introduced to the Philippines to try controlling pests, but the toads got out of hand and are now outcompeting our native amphibians.

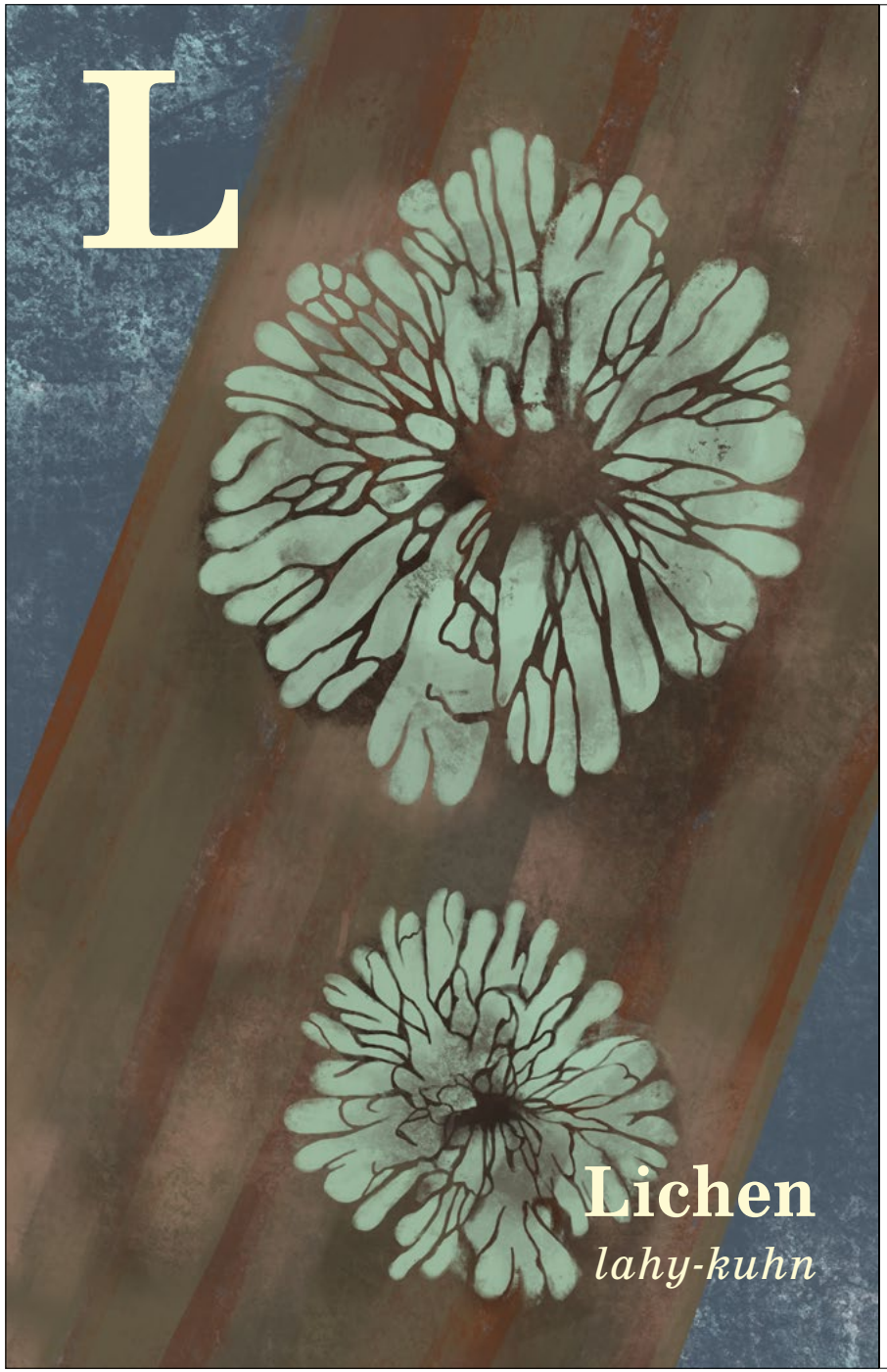
Suggested Activity: Research on which animals started out as common pets, but are now also invasive species.Make a poster on why they shouldn't be released into the wild. Share it with your friends and family!

Jumping Spiders are part of the Arachnid family Salticidae and can be found all around the world except for Antarctica. Instead of using webs to catch their food, they pounce and grab prey. Their eyes are positioned all around their head and this allows them to have a complete view of their surroundings. Sometimes, Jumping Spiders might end up on your hand but they won't bite unless you hurt them.

Suggested Activity: Some jumping spiders can leap up to ten times their body length! Let's see how far you can jump. Measure how long you can jump and, divide this distance by your height. Compare this to the Jumping Spider's ability. What did you find out?

The **Kamuning** *(Murraya paniculata)* is a small tree with very hard wood and fragrant white flowers. It can be found around the Philippines and the rest of Southeast Asia. Kamuning Road in Quezon City is named after this tree, just like how many other places and streets are named after native trees and plants.

Suggested Activity: Look for a map of the city you live in and look for places or streets that are named after plants!



Lichen are made of three tiny living creatures: fungus, algae, and bacteria. The three work together to survive on soil, rocks, and on the bark of trees and can be all kinds of colors. Some are flat and white, others are fluffy and green, and others can be bright yellow and crusty. Lichens love clean air! If you see a lot of them where you live, then the air where you are is clean and good for you.

Suggested Activity: Check out the trees and rocks around you. Lichen can come in many different forms and colors. Can you see any lichen growing on it? You can also ask an adult to download iNaturalist, an app that lets you be a citizen scientist by helping you identify the wildlife around you. You can use it to check if you were able to identify lichen correctly.

The **mistletoe** is a kind of plant that grows on the tops of trees. They are semi-parasitic, so their roots grow inside the tree they're on to steal its nutrients. Birds, like the Red-keeled Flowerpecker *(Dicaeum australe)*, love to eat the mistletoe fruits, but the fruit makes their dung sticky so they have to wipe their butts on the branch. Even the name mistletoe can be roughly translated to "dung-twig." This helps the mistletoe spread from treetop to treetop.

Suggested Activity: Write a poem about the mistletoe and its relationship with its host tree and with the Red-keeled Flowerpecker.

Animals build nests to raise their babies. **Nest** building is common for birds, but other animals, like fish, reptiles, and insects, also build nests. Bird nests can be made of mud, sticks, leaves, or, sometimes, just rocks. Tailorbirds are even known to stitch together large leaves into a nest using spiderwebs.

Suggested Activity: Use materials around your house to make a nice bird nest. You can glue together fallen leaves, twigs, used paper, or cardboard. Use some rocks or other round objects to represent the eggs or baby birds!

Odonata are flying insects, like dragonflies and damselflies. They have big eyes, four transparent wings, and front legs used for catching and holding their food. Dragonflies and Damselflies need clean water because they hatch from eggs as nymphs which live underwater. Odonata are among the most colorful of insects. Dragonflies come in many colors, like red, green, and blue, and their wings even have spots and bands. Meanwhile, damselflies are called the "Jewels of Nature" because they usually have sparkly colors.

Suggested Activity: Draw and color your own colorful Odonata.

To grow fruits and seeds, plants usually need to be **pollinated** by animals. like insects, bats, and birds. To attract pollinators, plants give them gifts, like yummy sweet nectar that encourage them to visit. Bees and butterflies go from flower to flower to drink the nectar using their proboscis (proh-bos-is), a thin hollow tube that acts like a straw. As they do this, they spread pollen from one flower to another.

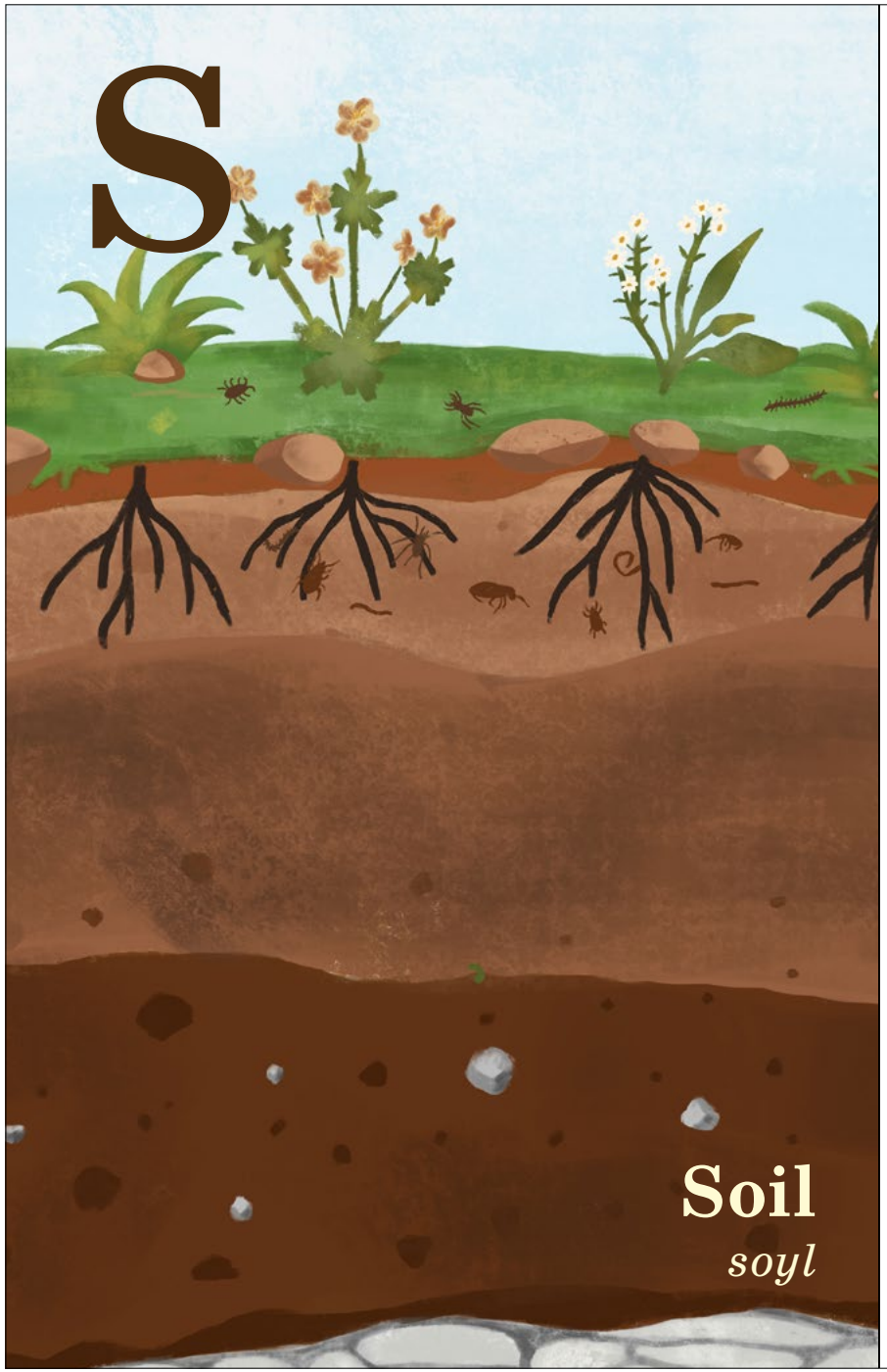
Suggested Activity: Dress up as your favorite pollinator animal. Make your favorite fresh fruit drink and drink it through a (reusable) straw. like they would. You can take a picture and share it with your friends and family. Make sure to let them know why pollinators are important to people.

Do you know who the busiest mom in the world is? **Insect queens** in bee, termite, and ant colonies are probably the busiest because they're the mom of all the many workers of the colony. There can be up to millions of individuals in a colony, so the queen needs to have helpers to feed and clean her and her eggs.

Suggested Activity: Let's show appreciation for someone who takes care of you. Ask them what you can do to help them out with everyday chores. You can volunteer to wash the dishes, clean your room, or even prepare a meal!

Rails are ground-dwelling birds. like the **Barred Rail (***Gallirallus torquatus)*, a shy and secretive bird that can be found in grassy areas near streams and canals. It has red eyes and striped patterns on its body with a white cheek stripe. In the early morning, groups of Barred Rails make metallic tikling-tikling-tikling sounds, which is why it is also called the Tikling. The traditional folk dance, Tinikling, is named after this bird because the dancers mimic the swift movements of the Barred Rail as it tries to evade the bamboo traps set by farmers in the field.

Suggested Activity: Ask an adult to help you find a video of the Tinikling Dance, which you can watch and try to learn the steps. You can even make sounds, like the Tikling, while you dance!



Soil is a mix of rocks, minerals, air, water, and living organisms that forms at the surface of our land. The soil you see everyday is important for all living creatures because this supports plant life and plants support us. If you dig down, you would see that the soil has different layers, called soil horizons, and each layer has different characteristics. Many invertebrates, like worms and insects help keep our soil healthy.

Suggested Activity: Prepare a small pot of soil and try to grow some seeds. You might be able to get seeds from your kitchen (ex. calamansi, tomato, squash, papaya, or monggo). Water your seeds every few days and wait for them to sprout. How does the soil help your plant grow healthy and strong?

Tree Frogs are arboreal, which means they spend most of their lives above the ground in trees and shrubs. They are smaller and lighter than frogs that we often see on the ground since they need to sit on leaves and branches. These kinds of frogs have well developed limbs and large finger and toe pads that give them superior sticking and grasping abilities.

This is a **Common Tree Frog** *(Polypedates leucomystax)*, which is native to the Philippines!

Suggested Activity: Ask your family to play leapfrog with you! Find an open space and ask everyone to form a straight line and to crouch low on the ground. Place your hands on their back and use it as a springboard to jump over them. Remember to spread your legs like a frog would, but always be careful!

Uwang is the local name of the **Rhinoceros Beetle** *(Xylotrupes gideon)*, named so because the males have large glossy horns on their heads! The female beetles don't have horns. They are usually seen during the rainy season, crawling on the ground or on a tree.

Their large larvae live underground or in decaying leaf matter before emerging as the Uwang we see wandering around. If you ever see one, be careful not to accidentally let it grasp you by its strong legs, which have sharp spikes. In case it happens, stay calm and allow it to walk off you and onto the ground or a plant!

Suggested Activity: Pretend to be an Uwang! Make a hat with a horn, like the Rhinoceros Beetle. using newspaper or scratch paper!

Varanus is the genus to which monitor lizards belong. They are known to be very intelligent reptiles, and have been observed playing and can distinguish numbers up to six! Isn't that amazing? The Philippine Water Monitor (*Varanus marmoratus)*, called Bayawak, may still be seen in urban areas. where there is a lot of vegetation and water. They are carnivorous, but don't worry because they only eat birds, small mammals, amphibians, and different invertebrates, like crabs. If you see any of these shy reptiles, just admire them from afar and let them be free to do their own business.

Suggested Activity: Can you compose a song about the intelligent Bayawak?

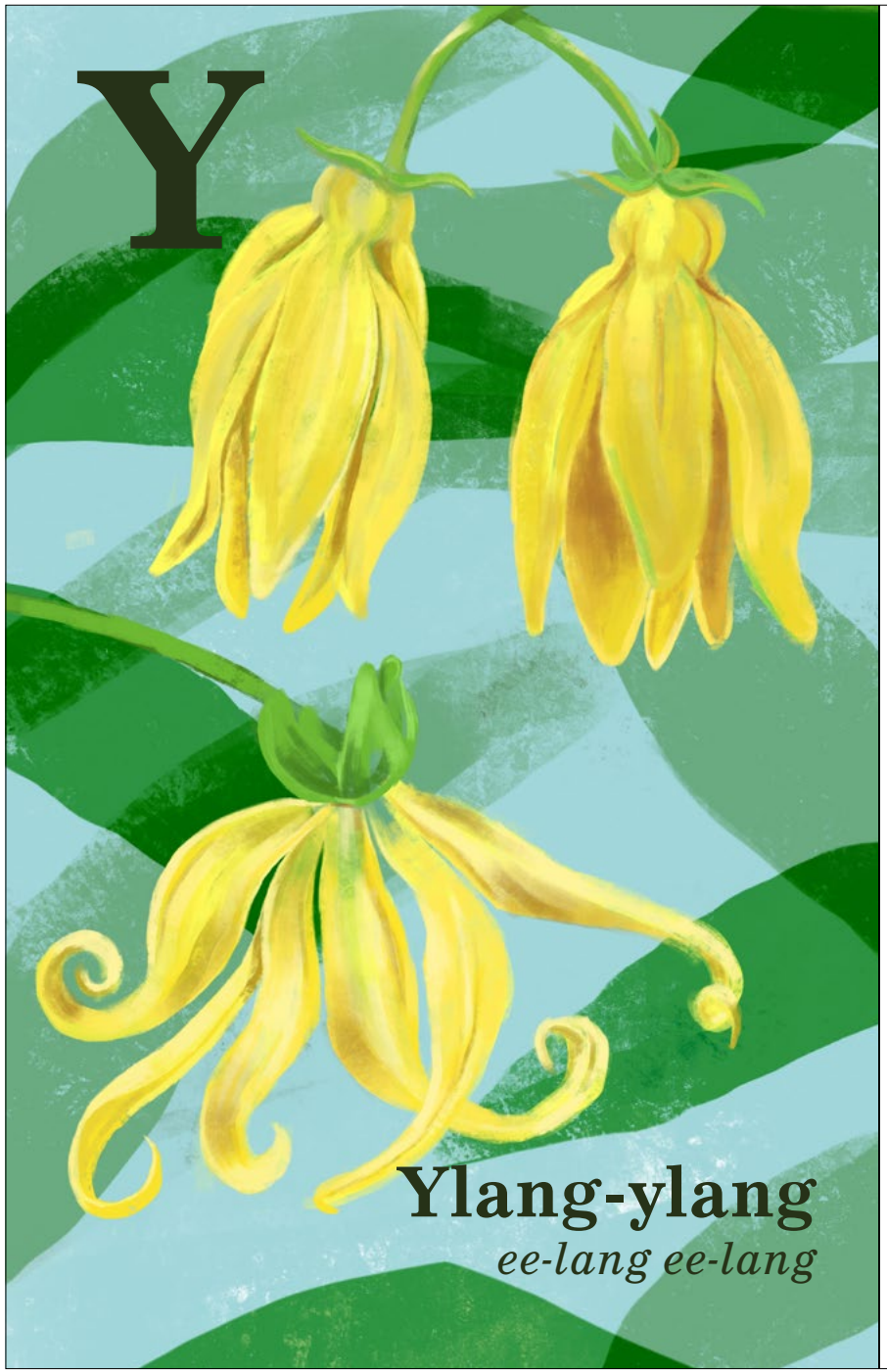
Wasps are insects that belong to Order Hymenoptera and, contrary to popular belief, not all of them sting! They are important pollinators, and because they prey on other insects, they also help control pest populations. Some wasps build their nests out of cellulose or mud! Potter wasps, for example, collect mud and soil, and shape these into jar-like structures. They lay an egg inside but, before sealing the "jar", they will also store a caterpillar that they paralyzed with their venom inside, to be food for their young to eat!

Suggested Activity: Use paper mache or clay to build your own wasp nest. You can even fill it with pretend food for baby wasps.

Xerophytes are plants that can survive in very dry places because they have unique ways to store precious water in their bodies. They can be found in deserts or growing on other trees in the rainforest. Usually, these plants have leaves that are thick and shiny and/or tuber roots for water storage. House plants, like cacti, succulents, and bromeliads, are examples of Xerophytes. Do you have some in your home?

You might have seen a xerophyte before since house plants like cactus, succulents and bromeliads are examples of this tough plant.

Suggested Activity: Ask an adult to help you build a terrarium using a recycled glass jar, some pebbles, soil, and a small xerophyte! How do you think your xerophyte collects and stores their precious water?



The **Ylang-ylang** *(Cananga odorata)* is native to the Philippines and other parts of tropical Asia. Its yellow green flowers have six leathery petals, which smell sweet and slightly fruity. Its scent is stronger in the evenings to attract nocturnal pollinators, like moths. The fragrant flowers will turn into small oval fruit that are a favorite snack of many birds and fruit bats. These birds and bats will spread the seeds to other places, where they will hopefully grow, and we can have more of this beautiful, aromatic tree to enjoy!

Suggested Activity: Ask permission and help from an adult to collect some flowers from your garden or the plants around your house. Carefully press these in between some newspaper and use some heavy books to press them down. Check on them every few days to see if you need to change the paper so you don't stain your books! After a few weeks, use your pressed flowers to make a nice greeting card.

Zebra Doves *(Geopelia striata)* are common urban birds that have a grey head, face and throat, red legs, and a blue bill. Their neck and sides are barred or striped, making them look a bit like a zebra. You may have seen them waddling around on the ground in gardens, parks, and roads since they love to eat grass seeds, insects, and worms. In the mornings, you may hear them cooing softly, “Kurukutook, kurukutook!”

Suggested Activity: Try to spot a Zebra Dove outside your window, on the grass in your garden, or in your driveway or sidewalk in front of your house.You can also ask an adult to help you find and watch a video of the Zebra Dove. Can you imitate its movement and calls?

About

CONTENT BY

The Ateneo Wild

The Ateneo Wild is a citizen science program that promotes the importance of urban biodiversity and green spaces in making our cities healthy and beautiful. Through social media, guided nature walks, printed media, and other activities, the Ateneo Wild hopes to deepen the community's appreciation for nature in the city.

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Ateneo Insitute of Sustainability

The Ateneo Institute of Sustainability was established in 2013 to serve as the vehicle for the Ateneo de Manila University's environment and development agenda.

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Founded in 2002, under two bilateral agreements between the governments of the United States of America and the Philippines, the Forest Foundation Philippines is a nonprofit organization that provides grants to organizations that empower the people to protect the forests.

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Inya is a graphic designer, visual artist, and life long learner. She graduated from the University of Ateneo de Manila University in 2019.

Her work stems from a deep curiosity for Philippine biodiversity and the desire to showcase them in imaginative and ornate depictions.

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