The Bee Activity Booklet

Fun activities to connect with nature in the city

_____

Your name

alvéole

It’s so much fun to **explore and discover nature** by using the honey bee and pollinators as our guides! In this booklet, you’ll find activities to connect with the nature around you, right here in the city. So, go on and discover the sometimes hidden wonders of the natural world. And if you’d like - but ask your parents first! - we’d love it if you shared your discoveries with us by **tagging us @alveolebuzz.**

Have fun!

1st Activity

The Backyard Hunt For Discovery!

All around us is a world of tiny creatures and impressive plants that work together to keep each other healthy - even in the city! But unless you go looking for it, you might not see it.

Here is a scavenger hunt to help you discover this "hidden" world of plant-animal teamwork all around you. We challenge you to head out into your alleyway, local park or even just your backyard to see how much you can find - you might be surprised!

What you'll need

- Your own two eyes and a determination for discovery!
- A camera *(optional)*

If you take pictures of your backyard discoveries, tag us @alveolebuzz and let us know with the hashtag *#backyarddiscovery*!

Discovery Guide

Here are some things to look for on your hunt.

- **An "impressive plant" growing through a crack or a tough spot**
  Can you find a dandelion or a blade of grass growing up through the pavement? Or a plant growing out of an unexpected place? Plants can be impressively strong and determined!

- **A "bee buffet" - a patch of 3 or more types of flowers growing close together**
  Bees get all of their food from flowers. Try and find a spot that could be considered a bee buffet with lots of choice of food.

- **A "flowering giant" - when looking for flowers, we sometimes also have to look up at the trees**
  A flowering tree is an amazing source of food for pollinators, with hundreds (if not thousands!) of flowers in one place. Try and spot one or many flowering trees by looking up at their flowers or identifying their leaves. Common flowering trees in cities are maple, cherry, apple and linden.

- **Some buzzing buddies - two or more types of pollinators**
  Chances are when you start looking at flowers... you'll start to see pollinators! You may be surprised (when you look closely) at how many different types bees and pollinators visit the flowers around you. Try and identify two or more different "buzzing buddies" - the more the merrier!

- **A critter under a rock**
  There are some bugs that make use of the cool and damp environment underneath big rocks or logs. You would never know until you look! Just be careful to place it back exactly where it was.

- **A leaf with a missing piece**
  Try to find a leaf that has been nibbled. There are many critters that make use of the leaves around us, be it caterpillars eating leaves or leafcutter bees cutting sections of leaves to help build their nests. Sometimes you can find clues of a past visitor by seeing the trace of a bite taken out of a leaf!

- **An animal home**
  Animals build their homes all around us. Just like humans, animals can get creative when they build their homes too! Try looking into the trees to see a bird or a squirrel nest made out of twigs or leaves. Keep an eye peeled for a spiderweb, a cocoon or an anthill!

- **A treasure of nature**
  Once you open your eyes to the "invisible" world of small creatures and plants outside, chances are you'll find some treasures you wouldn't have noticed before, be it a cool rock, a particularly beautiful flower or a weirdly-shaped stick, for example. If you're looking for it, every walk you go on can lead you to a natural treasure! Your treasure of nature doesn't have to look like treasure to anyone else but you!

We'd love to see where you decided to *#spreadyourloveofbees*! Tag us @alveolebuzz so we can watch your flowers grow with you!

2nd Activity

Spread the Love with Seed Balls

As you know, honey bees and other pollinators get all of their food from flowers. So the more we bee-lovers can plant, the merrier! Wildflower seeds are some of the most bee-friendly and heartiest flowers out there, meaning they will push through almost anything to grow.

Making seed balls makes planting wildflower seeds easy and is one of the fastest ways to spread our love of bees. But what's a seed ball, you may wonder? A seed ball is a loosely packed ball of dirt, clay and wildflower seeds. The idea is that wherever you toss a seed ball, a little patch of flowers - a little bee buffet, you could say! - will grow if you pick your spot wisely. Seed balls are a great way to make use of unused space in our cities and neighborhoods.

So, is there a vacant lot close to your house that's waiting to be built on? A corner of your front yard or alleyway that could use some wild, maintenance-free flowers? Try tossing a seed ball onto that space and see if you can get some flowers to grow!

What you'll need

- Potting soil (or any leftover soil you have lying around)
- Natural clay (can be found from a craft or gardening store in either powder or solid form)
  If you can't get your hands on clay and are ready to spread your love for bees with your seed balls immediately, you can also make seed balls using just soil, water and wildflower seeds
- Wildflower seeds
- A little bit of water
- Your hands

Making seed balls can get a bit messy! Consider making your seed balls outside, over a tablecloth or in your bathtub!

Instructions

1. **Mix**
   In a big bowl, mix together 3 parts soil with 1 part clay with a splash of water. The best tool to use for this is your hands! Combine the soil, clay and water until you can shape balls about an inch in diameter that will hold together. Add more clay and more water as needed to reach this consistency.

2. **Add seeds and shape**
   Once you can easily shape the soil and clay into balls, throw in a handful or two of wildflower seeds, mix them into the mixture and start shaping your seed balls.

3. **Dry and store**
   Thanks to the clay in the seed ball mixture, your seed balls will be able to dry out over time and be stored until you are ready to use them. To dry and store your seed balls properly, place your seed balls in a cardboard box and store them in a dark place.

4. **Plant**
   The best place to plant your seed balls is a spot outside that gets some sun and ideally has a bit of soil. However... you may be surprised at just how many places your wildflowers will grow! Don't be afraid to experiment and toss a seed ball in an unexpected (and welcome) place and see what happens. No need to water your seed balls - the next rainfall will do the job for you!

5. **Enjoy!**
   Keep track of where you toss your seed balls (maybe even draw a map!) and take note to come back and check on their progress in a couple weeks.

3rd Activity

The Power of Flowers!

Have you ever wondered what goes on inside flowers and how they grow back year after year? Performing a flower dissection is a great way of learning the basic anatomy of flowers and how they reproduce!

What you'll need

- One or several fresh flowers found outdoors or in a bouquet
- Some dissection tools (hands, tweezers, butter knife, magnifying glass)
- A sheet of paper (a piece of scrap paper from the recycling will do just fine!) or print out our Log Sheet on page 8
- A pencil
- Some tape *(optional)*

What kind of flowers should I use?

There are some types of flowers that make for an easier dissection than others. Spring flowers like crocuses, scillas and tulips are great options. (But remember, it's important to ask permission before picking a flower outside. If possible, choose a flower that has started to wilt and leave the others for the pollinators!) Bouquet flowers like lilies and Peruvian lilies (alstroemeria) are excellent options as well.

Dissection Guide

Step 1
Prepare your dissection log sheet

When it comes to any type of learning about the natural world around us, opening your eyes and observing is key! Print out the dissection Log Sheet (page 8) or use a sheet of blank paper to serve as your Log Sheet.

Step 2
Admire your flower!

Before dissecting your flower, it's important to admire its beauty!

Record your observations!

What color is the flower?
Does it smell like anything?
What does its texture feel like?

Step 3
Remove the petals

Believe it or not, just like humans, flowers have both male and female anatomy! Typically, when you remove the petals, you are left with the reproductive system of the flower.

Record your observations!

Have you ever seen the inside of the flower without its petals?
Are you surprised by what you see? If so, why?

Step 4
Identify the male anatomy

The male anatomy of a flower is the part that produces the pollen. It's called the stamen. It's the pollen that will fertilize the female anatomy of the flower. If you touch the stamen, you will likely end up with pollen stuck to your fingers, just like pollen will get stuck to a bee's *corbiculae* (pollen pants)!

Record your observations!

What color is the pollen that stuck to your fingers?
Are the stamens long? Short?
How many are there on your flower?

Step 5
Remove the male anatomy

Pick off the stamens one by one and lay them on your Log Sheet under the Male Anatomy section. Identify the specimen by drawing arrows pointing to the stamens. You can use tape to hold them down, or even try your hand at drawing them!

Step 6
Identify the female anatomy

What you are left with, now that you have removed the stamens, is the female anatomy of the flower. In basic terms, it is made up of the pistil, the ovary and the ovule. The pistil is typically a long tube that produces nectar and leads down to the ovary. Inside the ovary, we find the ovules (otherwise known as eggs). It's the eggs inside the ovary that will turn into a seed! *But in order for the ovule to develop into a seed, they need to be fertilized, or touched, by the flower's pollen!* That seed will then turn into a reproduction (a.k.a. a copy) of the plant.

Step 7
Open the ovary and see if you can find the ovules!

Using a butter knife or just your fingernail, open up the ovary of the flower - you may be able to see the ovules (eggs) inside! Often, depending on the development of the ovules, they may be too small to see with the human eye and this is where a magnifying glass can come in handy!

Step 8
Record the female anatomy and your observations!

Place the pistil, ovary and ovules (if any) in the *Female Anatomy* section of your Log Sheet and identify the specimen, drawing arrows to and identifying the different parts.

Record your observations!

Could you see the ovules?
Was the top of the pistil sticky with nectar?

Bonus
A test of your knowledge!

What are the two things bees look for when they visit flowers? On your Log Sheet, can you draw an arrow and identify the parts of the flower that produced these two things?

Just like the bees, our team at Alvéole loves flowers and would love to see pictures of your dissection sheets! Feel free to take a picture and share your dissection activity with us @alveolebuzz and tagging *#thepowerofflowers* - we could share your post with our whole community of bee-lovers!

LOG SHEET

Flower name: _____

Male Anatomy	Female Anatomy

Observations

Curiosity is key to connecting with nature in the city! We hope you enjoyed discovering the wonders of the natural world that surround you.

We wish you many more urban adventures!

alvéole

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