



Brevard County Libraries

We are shaking things up a bit with our
Summer Reading Program 2021!

In this week's STEAM Packet, we are going to the big city! We are going to learn about some wildlife that lives right next to people in the **Urban Environment** – Bees! We will even learn to make a "Bee Hotel" so we can make some observations at home!

STEAM Packets can be picked-up at any branch within Brevard County and are available for curbside service.

All STEAM Packets are developed to be take-home based projects. Most supplies will not be provided by the library and will be listed only as 'Supplies Needed.'



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[Brevard Public Libraries](http://www.brev.org)

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Storytime, STEAM, Craft, and Teen Packets developed by the Youth Services Department

The Urban Environment



Life in the City

When you picture the city, you may think of tall buildings, cars and sidewalks. However, there are many wild animals who have adapted to life in an urban environment right next door!

Cities and suburbs are home to many different types of animals, from birds like pigeons to mammals like raccoons and opossums. Creatures big and small manage to find homes in the most unusual places. Many people forget that insects manage to live in cities with people too! Bees, butterflies, and other **pollinators** help sustain wildflowers and garden plants through **pollination**. Flowers produce **pollen** which the bees collect. When bees fly from flower to flower they spread the pollen. This helps many flowers produce fruit and seeds.

Even in the city, people grow vegetable gardens! Bees are necessary for many garden plants to produce seeds, fruits, and vegetables, and to keep many native plants from disappearing.



Bee Hotels for Solitary Bees

Insects like bees and wasps might seem a little scary, but they are a very important part of the urban ecosystem. When you first think of bees, you might think of **Honeybees** living together in a beehive. But there are many species of **Solitary Bees** that live alone. Did you know 90% of all bee species are solitary? Unfortunately, bee populations are getting smaller, but you can help the bees and other pollinators by planting native wildflowers, keeping a garden, and building a "**Bee Hotel**"!

Solitary Bees need dry, well-ventilated spaces for them to 'bee' healthy and safe from predators. You can make a "Bee Hotel" to create a cozy home for bees in your own backyard. If you plant some native wildflower seeds, too, your bees will have a source of food as well!

Suggested Reads: Books available through Brevard County Libraries!

- “Where Have All the Bees Gone?” By Rebecca E. Hirsch
“What Lily Gets from Bee and other Pollination Facts” by Ellen Lawrence
“The Thing About Bees: A Love Letter” by Shabazz Larkin
“The Urban Animal” by Barbara Taylor
“Francine Poulet Meets the Ghost Raccoon” by Kate DiCamillo
“Going Wild: Helping Nature Thrive in Cities” by Michelle Mulder
“How to Bee” by Bren MacDibble
“The Honeybee” by Kristen Hall
“Bat Citizens: Defending the Ninjas of the Night” by Rob Laidlaw
“Questions and Answers About Bees” by Betty Reigot



Build Your Own Bee Hotel!

Supplies Needed:

- a can, jar, or small plant pot.
- paper strips cut to the length of your container (to roll into tubes).
- pencil to roll paper with.
- paper or plastic straws or other “tube” materials between 1/8 to 1/2 inch in diameter.
- toilet paper rolls
- string, yarn or twine
- non-toxic glue or tape
- ruler (to measure your paper)
- small sticks cut to the length of your container

Optional Supplies:

For a longer lasting bee hotel, weather resistant materials can be used in place of paper tubes:

- wax paper or parchment paper strips
- wooden or bamboo tubes for longer lasting bee hotel “rooms.”
- local wildflower seeds to plant and attract pollinators.
- Paint, Mod Podge, or decorations for the outside of your bee hotel.

Predictions:

Who do you think will visit your bee hotel?

What changes do you expect to see happen to the tubes in your bee hotel?

What attracts pollinators to plants?

What do bees and other pollinators do to help plants and humans?

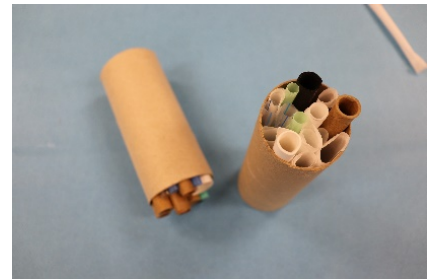
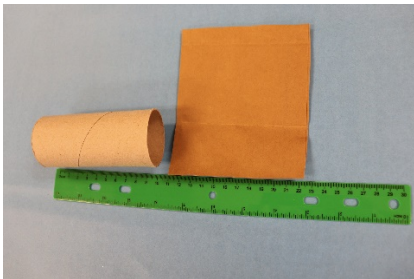
Why are bees important?

Directions:

This activity is intended for you to do at home with your family.



1. Make sure your container is clean and empty.
2. Decorate the outside of the can or jar you've chosen to use as your bee hotel with paint, stickers, or whatever you like! Use outdoor paint or Mod Podge if you want to weather proof your hotel.
3. Get your bee hotel rooms ready! If you are using straws, trim them to the length of your container.
4. If you are making your own tubes out of paper, measure the strips to the length of your container and roll several times tightly around a pencil. Use glue or tape to hold the shape.



5. Next, fill your toilet paper rolls with your tubes. Make sure the tubes fit snugly together and don't hang out of the container too much.

- Put your filled rolls into the container. Additional areas can be filled in with more tubes or sticks.
- Attach string to your bee hotel and add any additional decorations or Mod Podge for weather proofing.
- Hang it in your backyard, your garden, or wherever you want bees to visit.
- Try to hang your bee hotel 4-5 feet from the ground, in an area where it can get some early morning sun, but not hot afternoon sun.
- Optional: Plant local wildflowers to attract your local pollinators to your bee hotel



Reflection:

Write your observations down for the questions below.

Who “checked in” to your bee hotel? Did you observe any insects near your bee hotel?

Which tubes in your Bee Hotel were used? Did you notice plugs in any of the tubes? What materials were used (example: leaf pieces from leaf-cutter bees)?

Did you notice any butterflies, bees, or birds by the plants around you?

Did you put your bee hotel by any flowers? Do you think the flowers helped attract bugs or other critters?

What could you do to attract more pollinators to your bee hotel or to a vegetable garden?

Were there more pollinators near your hotel in the daytime or evening?

Why is it necessary for plants and animals to adapt to an environment?
