



# Help save the bees with **TURN THIS BOOK INTO A BEEHIVE!**



By Lynn Brunelle, four-time Emmy Award-winning writer for *Bill Nye the Science Guy*

Most of us are familiar with the honeybee, a keystone species revered for its supreme pollinating skills and feared for its notorious stinger. But what about the mason bee, the unsung hero of the insect world?

The mason bee pollinates as many flowers in a single day as 100 honeybees, and mason bees don't sting, making them nature's non-aggressive super-pollinators.

So, how can we help sustain the lives of these friendly buzzing bees? Enter **TURN THIS BOOK INTO A BEEHIVE!: AND 19 OTHER EXPERIMENTS AND ACTIVITIES THAT EXPLORE THE AMAZING WORLD OF BEES** (April 3, 2018; \$19.95; by Lynn Brunelle and Anna-Maria Jung; Workman Publishing), an indispensable guide with a removable book jacket and tear-away paper nesting tubes that turn into a home for mason bees, with each "room" providing space for 10 to 12 mason bee babies!

Packed with 19 sensory-driven experiments and activities that offer a deeper understanding of what it's like to BE a bee, **TURN THIS BOOK INTO A BEEHIVE!** provides an early introduction to environmentalism and offers inspiration for burgeoning conservationists. Readers can make a buzzer that replicates the noise made by a bee's wings, trace back the ingredients and materials in their favorite foods and clothing to see just how closely mason bees influence our daily lives, and create safe sprays that will make everything from urban gardens to open yards a welcome, healthy environments for these super-pollinators. Readers will even learn how to plant a bee-friendly garden!



The book also introduces readers to the complex social hierarchy of the honeybee world by showing how integral each player is to the beehive, from the forager scout responsible for tracking down flowers and other food sources to the esteemed queen, the largest bee in the colony responsible for laying all the eggs—about 2,000 in a single day! Armed with this title, young scientists will learn *why* this keystone species is an irreplaceable part of our world and be called to protect them by turning this book into a beehive!



## **TURN THIS BOOK INTO A BEEHIVE!: AND 19 OTHER EXPERIMENTS AND ACTIVITIES THAT EXPLORE THE AMAZING WORLD OF BEES**

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Photo © Tasha Vanasse

## **ABOUT THE AUTHOR**

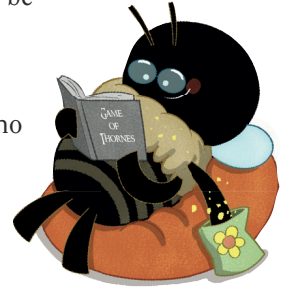
LYNN BRUNELLE is a four-time Emmy Award-winning writer for *Bill Nye the Science Guy* and author of over 45 books, including the bestselling *Pop Bottle Science* and *Camp Out!* She is a regular contributor to KING-TV's *New Day Northwest* as a family science guru and NPR's *Science Friday*.



# 10 FACTS ABOUT BEES

1. There are 25,000 different species of bees buzzing around the earth today. They can be divided into two major groups—2% social bees and 98% solitary bees.

2. There are about 150 different types of mason bees in North America! Chances are, no matter where you live, you probably have these helpful bees flying around.



3. Unlike with social bees, every single female mason bee is a queen. She does it all—finds her own nest, gathers her own food, lays her own eggs, and protects them!

4. Bees' wings move like helicopter blades. They fly an average of 15 miles per hour and their wings flap at 200 beats per second.

5. Bees have supersight. Unlike humans who have only one lens per eye, bees have a compound eye on each side of their head made up of over 5,000 individual lens parts called *ommatidia*.

6. A bee's sense of smell is 100 times more powerful than a human's. Scientists at the Stealthy Insect Sensor Project at the Los Alamos National Laboratory have even trained bees to be bomb detectors!

7. At a rate of about an egg a day, it takes a month for a mason bee to lay all her eggs. Each paper nesting tube featured in this book will be a single home for as many as 10 to 12 babies from one mother bee!



8. Honey has a heck of a shelf life! When archaeologists excavated a 3,000-year-old tomb, they discovered honey that was still edible.

9. A honeybee colony includes three types of bees: worker bees, drones, and the queen. With each bee performing a specific job, the colony is a well-organized village!



10. It takes a lot of work to be sweet. A one-pound (.5 kg) jar of honey is the lifetime work of approximately 768 bees!



workman



## Power of the Colony

All of the bees in a colony depend on each other. They each have jobs to do. Here is a list of some worker bee roles. They fall under two categories: forager bees and nest bees.



**FORAGER BEES** make their way out of the nest to either protect it or search for food.

**NEST BEES** stick around the nest. They make wax, build honeycomb, gather nectar from foragers to create honey, and keep the nest clean and temperate.



### COURT BEE

This bee stays within antenna distance from the queen at any given moment. She makes sure the queen is fed, clean, warm, dry, healthy, and producing eggs.



### FANNING BEE

This bee uses her wings to cool the queen, keep the eggs cold in hot months, fan the honey so it evaporates and becomes the right consistency, or keep the nest at the perfect temperature and dryness.



### GUARD BEE

This bee is the colony's first line of defense. She stands watch, attacks intruders, and warns the colony if there's danger.



### FORAGER BEE

This bee gets the information from the forager scout and takes off to find the flowers. She returns with a belly full of nectar or baskets full of pollen to give to a worker bee. A forager specializes in either water, nectar, or pollen.

### NURSE BEE

This bee takes care of the eggs and developing larvae.



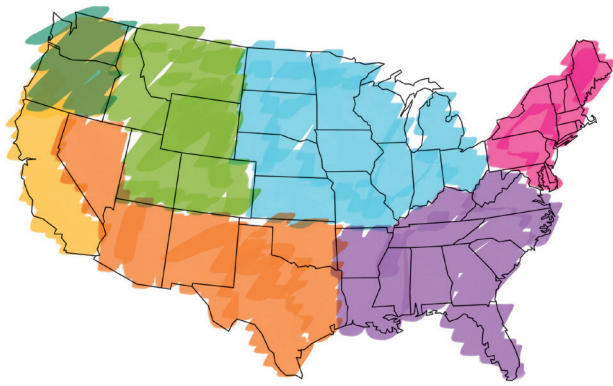
### FORAGER SCOUT

This bee explores the neighborhood looking for flowers and other food sources. She then flies back to the colony to report back.



### UNDERTAKER BEE

This bee keeps the place clean. She gathers the bodies of dead bees that could spread infection and carries them to the opening of the nest, where she tosses them out.



## Mason Bee Blooms

Here is a region-by-region snapshot of some native plants that bloom in the spring and might delight your bees.

### SOUTHEAST



Redbud



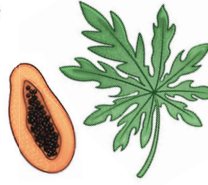
Honeysuckle



Hydrangea



Sunflower



Pawpaw

### MIDWEST



Phlox



Willow



Prairie Clover



Sumac

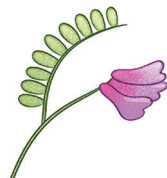


Black-Eyed Susan

### ROCKIES



Columbine



American Vetch



Bee Balm



Indian Paintbrush

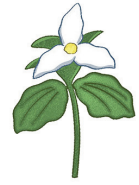


Prairie Bluebell

### PACIFIC NORTHWEST



Hazelnut Tree



Trillium



Blackberry



Vine Maple

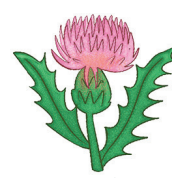
### WEST COAST



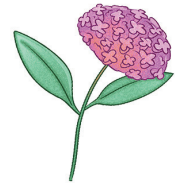
Poppy



Lupine



Thistle Sage



Milkweed

### NORTHEAST



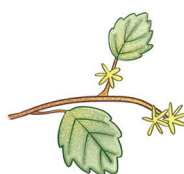
Dogwood



Kinnikinnick



Violet



Witch Hazel

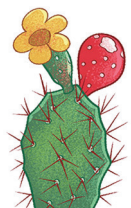
### SOUTHWEST



Terrybear Cholla



Mesquite



Cactus Apple