



2020 Cub Scout Backyard Challenge



Native Bee House

Category: Nature

Difficulty: Advanced

Description:

Bee boxes, often called bee “houses” or “hotels,” offer an opportunity to learn about our area’s solitary bees while helping pollinators. Unlike the familiar hive-forming honeybee, solitary bees don’t live together in colonies. Instead, individual female bees build their nests alone.

The Delaware Valley has hundreds of species of solitary bees, including different kinds of mason bees and leafcutter bees, which use small cavities to construct nests made of mud or leaves. Commercial and homemade bee boxes that contain tubes made from bamboo or cardboard straws can give these bees a safe place to lay their eggs. When constructed and maintained properly, bee boxes offer an excellent opportunity to see solitary bees up close.

Don’t be afraid of these bees, unlike European honeybees, they are not aggressive, and they do not have stingers that can hurt humans. Bee boxes are an easy way to learn and have a chance to watch their busy work.

When making a bee box, you should make nesting tubes that are 6 to 8 inches long and of various widths. Different types of bees will use different diameter tubes, but they need to be between three-thirty-seconds of an inch and five-eighths of an inch in diameter. Native bees will explore shorter tubes but may not use them.

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Native bees who nest in bee boxes emerge in spring and summer and will live for only one season during which time female bees build nests and lay their eggs. Female bees leave pollen and one egg in individual cells they construct in the tube. Each cell is sealed off from the other as the tube is filled. Finally, the bee closes the tube with mud (mason bees) or leaf material (leafcutter bees). The egg within each cell becomes a larva, eats its pollen, and spins a cocoon. The adult bee remains dormant within its cocoon until spring temperatures are warm enough for them to emerge. Female bees lay a female egg in the far back of the tube and then all other eggs are male. Please make sure they have enough room.

The tubes should be contained in a weather resistant shell. Something like a #10 tin can, PVC tube or wooden frame. Install in a location that will receive full morning sun, is within 100 to 200 yards of a pollen source and is within 50 yards of a source of mud, which some bees use to construct their nests. The front of the box should be protected by hardware cloth stapled in place. In the winter, boxes should ideally be stored in an outbuilding that gets seasonal temperature (cold, but sheltered), or in an outdoor location sheltered from the elements. The following spring, the tubes can be placed outside when temperatures are above 55 degrees, so the bees can emerge. (Don't forget!)

Importantly, nesting tubes need to be replaced each year after bees emerge, otherwise they can harbor disease and parasites.

Nesting tubes can be made of bamboo shoots or plant stems that have hollow or pithy stem centers. Cut them to length and drill out the centers. Pre-made tubes can be bought online, just make sure the tubes are long enough.

If you are interested in making a thorough study of the native bees in our area, we recommend the book "*The Bees in Your Backyard: A Guide to North America's Bees*," by Joseph S. Wilson and Olivia J. Messinger Carril.

Even more information about how to build native bee houses can be found online. Just remember most of the examples use tubes that are too short.





PVC Native Bee House



Native Bee Hotel



#10 Tin Can Hotel



Reinforced Native Bee Tube Station

Please send pictures of your creations!

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