

# Wild Bee Nest Rubric

Criterion (Score 0 if element is absent)	Below Expectations (1)	Meets Expectations (2)	Exceeds Expectations (3)	Creativity & Aesthetics (1-5)	Bee Expert Bonus (1-3)	Score
<b>Frame structure</b> <b>Maximum size</b> <b>(18”X18”)</b>	Exceeds maximum size. Construction is not sturdy and won't withstand extreme weather.	Fits within maximum dimensions. Closed in the back with a roof to keep rain from saturating interior nesting.	Fits within maximum dimensions. Open in the front. Closed in the back with a roof to keep rain from saturating interior nesting. Weather-proof paint or stain.	Get as creative as you'd like!!		
<b>Interior Nesting</b>	Wood block or stem that is 6 inches. Treated with paint that is toxic or non-weather proof. Only one diameter for holes or stems. Holes open on both sides. Use of non-biodegradable or excessive plastic nest materials.	Block or stems have one closed end and no protruding wood splinters or fibers within tunnel galleries.	Diversity of hardwood (high abundance) and stems (high diversity) for nesting. Untreated stems from last year's wildflowers. No protruding fibers (smooth tunnel). Stems are roughly 6-8” inches and wood blocks 4-6” in length. Blocks and or stems are closed off on one end. Holes are drilled in wood blocks with varying hole diameters ranging from 1/16” to 5/8”. Tightly packed. Tunnels/ stems perpendicular to wood's grain and horizontal to the ground. All biodegradable materials (i.e.-no glue).	Variety nesting (blocks, logs). Weatherproof & nontoxic paint. Removable for education.		
<b>Installation</b>	Difficult to mount. Hazard to pedestrians and or inhibits traffic visibility.	Easy to mount. Includes two attachment points on top and two on bottom. Not a hazard to pedestrians.	Easy to mount. Includes two attachment points on top and two on bottom. Means of securing the device to prevent nest from “walking away”. No hazard to pedestrians walking under. Structurally durable, (ex. Stems/blocks/ and other parts won't blow away in bad weather).			
<b>Cleaning</b>	No way to clean or dispose of nest material.	Nest material can be disposed of (non-biodegradable or biodegradable)	Removable interior components for annual cleaning and composed of biodegradable materials.			
<b>Bee's Choice</b> <i>Evaluated at a later date</i>	Few occupied holes	Some occupied holes with more than one kind of materials (indicates more than one species of bee utilizing the nest)	Lots of occupied holes and with multiple kinds of nesting material used.			

**TOTAL SCORE:**

**Scoring is subject to additional points based on discretion of bee experts judges.**

### **Bonus points:**

- Select Forest Stewardship Council (FSC Certified) wood. The FSC certification is considered the “gold standard” designation for wood harvested from forests that are responsibly managed, socially beneficial, environmentally conscious, and economically viable.
- Do NOT use pressure-treated (green-treated) wood. The chemicals may be harmful to bees.
- Use sustainable/repurposed materials to show your environmental awareness.
- Select a design that keeps predators away, protects the bees from weather elements and boosts the solitary bee population. For example, an overhang roof to keep the nest material dry.
- Use a fully removable tray for easy inspection and educational pursues with kids and adults.
- Use dark colors to attract bees (blues of various shades attract bees and differentiate the nest hole locations).

### **Considerations for easy installation and cleaning:**

- Plan for it to be positioned in a place where it gets morning sun and attracts wild bees.
- Houses will be attached to large visible landmark or tree and kept off the ground to avoid getting splashed by rain or covered by vegetation.
- They may be protected in winter by surrounding them with hardware cloth.
- If straws are used rather than native stems, use paper, not plastic.

### **Maintenance to be conducted by Flyway Personnel:**

- At the end of nesting season, remove nesting material (blocks, stems, etc.) and place them in a ventilated container in an unheated barn/garage so any remaining baby bees can emerge in the spring. Take the nest frame and submerge in a weak bleach-water solution for a few minutes. In the spring, fill block with new stems or paper straws and return it to the location. Place old nesting material (with bees in them) alongside the nest and allow them to emerge naturally.
- Nest blocks and stem bundles can be phased out every two years by placing them inside a dark container with a small hole drilled at the bottom. The contraption should be hung adjacent to a previously unused nest block or stem bundle. As bees emerge from the old nest, they can exit the hole at the bottom and emerge to find the new nest hanging nearby.

### **Resources**

Bauer, Erin C., Lynch, Louise L., Golick, Doug A., Weissling, Tom J. Creating a Solitary Bee Hotel, NebGuide February 2015, Guide #2256. University of Nebraska Lincoln Extension.

Mader, Eric, Shepherd, Matthew, Vaughan, Mace, Guisse, Jessa. Tunnel Nest for Native Bees: Nest Construction and Management, Invertebrate Conservation Fact Sheet. Xerces Society for Invertebrate Conservation. Serial Number 13-054, Version Number02.

Additional tips and wild bee house images: <https://earthem.com/2015/05/01/creating-a-native-bee-apartment/>

