

Make Your Own Milk-Carton Bee Nest

Close to a third of our native bees nest in wood, including hollow- or pithy-stemmed plants. For example, small carpenter bees (*Ceratina* spp.), leaf-cutter bees (*Megachile* spp.), masked bees (*Hylaeus* spp.), and mason bees (*Hoplitis* spp., *Osmia* spp.) are all types of twig or stem-nesters. Milk-carton bee nests are fun to make and use materials that are easy to find. Visit Pollination Guelph's web-site, www.pollinationguelph.ca, for different methods, or for more information on bees, other pollinators, and pollination in general.



What you will need*:

2L or 4L milk carton (rinsed)	1 pair of scissors	String
4 sheets of 8 ½ x 11" white paper	Pencils or dowels of varying sizes	Post/Stake
4 newspaper pages	Tape ("Scotch" or masking is best)	Paint/Markers

*Note: hollow or pithy-stemmed twigs can also be used in place of the newspaper tubes.



Directions Using Newspapers:

1. Following the fold lines at the top of the carton, cut half-way around the carton (e.g. where the "spout" is). This leaves an overhang on the box to help keep out the elements.
2. Paint the outside of the carton using weather-resistant paints. Decorate as desired using paints or permanent markers.
3. Layer sheets of newspaper and plain paper together, with the long edges together. The white paper keeps the bees away from the newspaper ink, and the newspaper increases the strength of the tube and decreases the light.
4. Cut the newspaper-white paper layers along the edge of the white paper (i.e. make 8 ½" wide segments).
5. Fold this segment in half along the longest length, and then in half again. Cut the folds so that you have similarly-sized newspaper-white paper sets, approximately 2 ¾" x 8 ½" (7cm x 20cm).
6. Using a pencil or a dowel, roll the pieces into cylinders or tubes. Different sized dowels are recommended as different bees prefer stems of different diameters and lengths (see also #8 below).
7. Tape the edges shut, and slide the tube from the dowel. Fold the last 1/2" to 1" (1-2.5cm) of the tube upwards and tape it to the body of the tube. This closes the end of the tube, and prevents light from entering. The female will plug the front entrance with mud after she finishes nesting.
8. Repeat until you have 15 or more tubes. Place the tubes in the carton, packing additional newspaper around the tubes so that the tubes remain horizontal and will not fall out if moved.

Directions Using Twigs/Stems (continue after steps 1 & 2 above):

Any type of dead stems with a hollow or pithy stem can be used for nesting tubes. Example species include goldenrod, Queen Anne's Lace, sumac, teasel, cattails/reeds, elderberry, parsnip, rose, and raspberry. One end of the twigs should be closed (e.g. by a knot or stem node) so that the tube has only one opening; the female bee will plug the front entrance with mud after she finishes nesting. Pack the tubes in the box tightly so that the tubes remain horizontal and will not fall out if moved. Tubes should end just before the edge of the box overhang, to protect the bees from the elements.

9. The completed nest can be placed on a building, post, or in a tree. The nest should be kept level, with the entrance facing east or south-east. Direct sunshine in the morning helps warm the bees up in preparation of flight. Ensure that the nest is stable and not going to move in the wind, or else the bees will nest elsewhere. The actual height doesn't matter, although 2 to 6' (0.6-1.8m) from the ground is good.

Maintenance:

It is best to put out nests in early spring, although it is never too late to put a new one out, as females of some species will lay eggs throughout the year. If a female finds a tube suitable, she will lay a series of eggs on a pollen and nectar ball, separated by partitions. As the eggs hatch, the larvae will feed on the provisions, and then create cocoons in which they will mature into adults later in the summer or the next spring. It is important to note these bees will only sting if handled roughly (e.g. squeezed), and in the rare cases where this happens, their sting is similar to a mosquito bite.



Keeping your nest clean and dry is important. Nests should not be moved in the spring and summer if possible, as the developing larval bees could become dislodged from their food and die. Tubes and nests should be replaced every year or two. With your help in providing flowering plants and nesting habitat, the decline in bee numbers can be stopped.