

# Condos for Solitary Bees

## Action Project Lesson Plan

### Purpose

To educate students about the importance of native pollinators and increase solitary bee nesting sites in your schoolyard or community.

### Overview

In small groups, students will create habitat for solitary bee species in order to increase the number of local pollinators and biodiversity in the schoolyard. Components of solitary bee habitats include bee condos, bee baths and a pollinator garden.

### Getting Organized

**Level:** Grade 6

**Curriculum Connections:**

Science & Technology- Biodiversity

Art- Visual Arts

**Length:** One to two hours

**Materials:**

- Eco Adventure Guides (Action Project planning pages 20-22)*
- Scrap wood – 4"x6" or 6"x6"
- Drill and drill bits (1/4" to 1/8" diameter)
- Bamboo stakes – cut to size
- Other materials based on design
- Art supplies

### Teacher Background

Pollinators are an essential part of our ecosystem. In order for many plants to produce seeds and fruit, they need pollinators to transfer pollen from one plant to another. The work of pollinators touches our lives every day through the food we eat, giving us just one of many reasons why it is important that we provide habitat for these species.

There are many different types of pollinators (butterflies, bees, wasps and beetles) that are being severely impacted by the use of pesticides and insecticides on crops and plants, resulting in staggering population declines. A large number of pollinators are bee species and many of these species are solitary – meaning that they do not live in a hive. Solitary bees are stingless or will not sting unless they have to (because they are not protecting a hive!).

### Activity

1. In small groups, students will assemble their own bee condo. Have students research various types of solitary bee species and their nesting site preferences. Depending on resources, students can create different types of bee condos and monitor them to see which structure is preferred by various species.
2. Wooden Bee Condo:
  - Use wood that has not been chemically treated and that is at least 6 inches thick.
  - Have students mark on the wood where they would like tunnels to be drilled.
  - Teachers can drill holes using an electric drill. Use drill bits varying in diameter between 1/4" to 1/8".

- Nail or screw on a roof to protect the opening of the tunnel.
- Have students decorate the sides of the bee condo.
- Place nesting blocks in a warm location with southern exposure and protection from the elements.

3. Bamboo Bee Condo:

- Have students create a design for securing the bamboo together, encouraging creativity. Examples include using string, a recycled tin can, or gluing them to a block of wood.
- Bamboo will need to be cut to length depending on the design. You can purchase untreated bamboo garden stakes at most garden centres. There are also alternatives to bamboo; most any small-diameter tube can be used (e.g. reeds)
- Plug the end of each piece of bamboo using mud.
- Students can assemble their condo and decorate the sides.
- Place the condo in a warm location protected from the rain.



*Photo courtesy of Genesa Circle Gardening*

4. Once the condos are mounted outside, students can monitor these nesting sites and determine the best design for the species of bees present in your area. Factors such as type of condo, location, colour of wood and/or diameter of tunnel can be examined as research projects.
5. Maintenance: It is best to put the nests out in early spring – although it is never too late! If a female finds a tube suitable, she will lay a series of eggs on a pollen and nectar ball, separated by partitions. Keeping your nest clean and dry is important. Nests should not be moved in the spring and summer if possible. Tubes and nests should be replaced every year or two.

**Extension: Build a Bee Bath!**

Along with the other three main components of a habitat for any animal (food, shelter and space), bees also require water.

- Bees cannot land in a conventional bird bath because there is nothing for them to safely perch upon.
- A bee bath needs islands for bees to safely touch down and drink from. It is best to use rocks in a shallow dish. The bath should be placed at ground level within a garden.
- Replenish the water in the bowl daily, making sure that the islands are exposed.

**Extension: Plant a Pollinator Garden!**

- Many school yards have small gardens at the front of the school. The class can work together to increase the diversity and abundance of native flowering plant species within these gardens. With this increase will come an increase in the amount of food available for solitary bee species and other pollinators.
- If a garden does not already exist at your school, consider planting native flowers in containers.
- Check out the suggestions for flowering plants native to Ontario found in the *Resources* section below.

See next page for online resources

# Online Resources

Canadian Wildlife Federation | <http://cwf-fcf.org/en/discover-wildlife/magazines/wild-classes/entries/2011/grade-5/building-a-bee-condo.html>

Resonating Bodies | <http://resonatingbodies.wordpress.com/resources/building-houses-for-native-bees/>

The Xerces Society for Invertebrate Conservation | <http://www.xerces.org/>

Anna's Bee World | <http://buzzybeegirl.wordpress.com/2009/04/04/got-wood/>

Bee Friendly Gardens | <http://halterbrothers.wordpress.com/2013/03/18/bee-friendly-gardens-making-a-bee-bath/>

Ontario Trees & Shrubs | [http://www.ontariotrees.com/main/alien\\_native.php?type=N](http://www.ontariotrees.com/main/alien_native.php?type=N)

Ontario Wildflowers | <http://ontariowildflowers.com>

Many garden centres offer a selection of plants native to Ontario. Follow this link to learn more |

<http://www.torontozoo.com/adoptapond/urbanoutback/part54.html>

*Be sure to check out our website, [www.enviroleaders.ca](http://www.enviroleaders.ca), for more great resources!*

