

# How to Make a Solitary Bee Nesting Tube

## Materials needed:

- Pringles can
- Acrylic craft paint
- Paint pens
- Nesting tubes (Hollow plant stems, commercially available tubes for bee nesting boxes, bamboo stalks, paper straws)
- Long zip-ties

## Instructions:

1. Using a clean Pringles can, measure 6 ½ inches from the bottom and cut off the excess from the top of the can.
2. (this step is optional) Paint a fun design on the outside of the can. When dry, apply a coat of sealer.
3. Prepare nesting tubes. Cut hollow stems, straws, etc. to 6 inches long. Make sure they are smooth with no splinters. Make clean cuts just above a node to seal one end, remove all leaves, sand any rough edges, dry the stems completely.
4. Insert Nesting Materials into the Tube. Ensure that the open end is facing out. **Do not use glue.** This will cause a dangerous buildup of parasitic wasps, fungi, and mites over time.
5. Install your nesting tube.
  1. Wrap a string or zip tie around the tube.
  2. Attach to a rigid, vibration-free surface.

## About Solitary Bees

### What are solitary bees?

- Solitary bees live independently. They do not live in colonies.
- Solitary bees do not make honey.
- Each female solitary bee constructs her own nest.
- Solitary bees are native to our local area. (Honeybees are from Europe.)

### Common types of solitary bees in North Carolina

- Bumble bees
- Carpenter bees
- Mason bees
- Leafcutter bees

## Benefits of Solitary Bees

- **Superior Pollination Efficiency:** One solitary bee is equal to 100 honeybees pollinating.
- **Early and Long-Season Activity:** Species like mason bees emerge earlier in the spring than honeybees, making them excellent for pollinating early-blooming fruit trees.
- **No Stinging Risk:** Most solitary bees are virtually stingless and non-aggressive. Those with venom do not cause anaphylactic shock.
- **Local Focus:** Solitary bees forage within a 300-foot radius of their nests, ensuring your own garden receives concentrated pollination.

## How Can I Attract Solitary Bees to My Garden?

### Provide These:

- Diverse native flowers for forage
- A source of mud or plant resin for building chambers.
- Safe nesting sites (like drilled wood or paper tubes)

## Plant for Bees

- Plant native blooming trees, shrubs, and wildflowers to provide pollinators with nectar and pollen to eat.
- Plant for variety in color, sizes and seasons.

## Help protect their nests

- Provide nesting materials – water, mud, safe nesting sites.
- Don't cut away dead plants in early spring
- Avoid the use of pesticides

## How do the bees nest in tubes?

Solitary mason and leafcutter bees nest by creating a linear row of individual "brood cells" inside hollow tubes or tunnels. The female gathers pollen and nectar, lays a single egg per cell, and seals each chamber with materials like mud or leaves before finally plugging the tube's entrance.

**Mason Bees:** Use damp mud to build their cell partitions and tube caps.

**Leafcutter Bees:** Cut perfectly round, uniform pieces of leaves and flower petals to wrap their cells and seal the tunnel.

**Resin Bees:** Use sticky tree sap and plant resins to build their brood chambers.

## What are good nesting materials?

- Phragmite reeds (*Phragmites australis*) – available online
- Hollow plant stems

- Commercially available tubes for bee nesting boxes
- Bamboo stalks
- Paper straws
- Pre-drilled wood boxes

Smooth are edges essential – if the bee tears a wing, she will not survive.

Nesting tubes should be an inside diameter ranging from **3/32 inch** to **3/8 inch** and **6 inches long**. This length ensures the bees can lay a healthy ratio of female eggs (at the back) to male eggs (at the front) and provides protection from predators.

## Take care of your nesting containers

Avoid predators - Don't create death traps for the bees.

- **Remove old materials:** Old nesting materials will become infested with mites that kill the larva.
- **New nests each year:** Make a new nest over the winter each year. Place it where your old nest box was installed last year.