

# Texas Bee Identification Guide

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1. Texas A&M Agrilife Extension Service
2. Texas Beekeepers Association
3. JMad Images
4. Pollinator Partnership



**POLLINATOR PARTNERSHIP**

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**Bees** are beneficial insects that pollinate flowering plants by transferring pollen from one flower to another. This is important for plant reproduction and food production. In fact, one-third of the nation's food supply depends on pollinators. While the honey bee gets most of the credit for providing pollination, there are actually about 800 bee species in Texas!

**Using this guide:** This card provides key features needed to identify 12 types of bees found in home landscapes. The approximate size of each bee is listed in millimeters. The following symbols will help along the way:



*Common nesting locations.*



*Identifying aspects or features to watch for.*



*Additional random facts that help discern differences between bee species.*



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## Bumble bees (*Bombus* spp.)

Family: Apidae, 10-23 mm



**Nest:** Social; in the ground (abandoned rodent nests), piles of wood, or leaf litter



**Description:** Medium to large size, very hairy bodies, yellow & black in color, pollen basket on hind legs



**Random fact:** Able to be active in colder weather than other bees; 9 species of bumble bees in Texas



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## Large Carpenter Bees (*Xylocopa* spp.) and Small Carpenter Bees (*Ceratina* spp.)

Family: Apidae, *Xylocopa*: 13-30mm  
*Ceratina*: 2-15mm



**Nest:** Solitary to communal; in wood or plant stems



**Description:** *Xylocopa* – Medium to large size, dark wings, abdomen lacks hair  
*Ceratina*: Tiny to medium sized, nearly hairless and shiny, metallic blue or green



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## Sweat Bees:

- Furrow Bees (*Halictus* spp.)
- Metallic Sweat Bees (*Augochloropsis* spp.)
- Striped Sweat Bees (*Agapostemon* spp.)

Family: Halictidae, 3-12mm



**Nest:** Solitary to social, usually nest in the ground, with a few nesting in rotten wood



**Description:** Tiny to medium sized, two color forms- metallic OR blackish-brown with pale bands of hair on abdomen, slim bodies, hairs for carrying pollen on hind legs



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## Leafcutter Bees (*Megachile* spp.)

Family: Halictidae, 10-20mm



**Nest:** Solitary; in wood & preexisting cavities, some nest in the ground



**Description:** Small to large size, dark colored with whitish-yellow hairs and striping on abdomen, fuzzy hairs under abdomen to carry pollen, large mandibles



**Random fact:** Typically line nursery area with plant material

## How to Identify Bees

All bees have three body segments, a **head**, **thorax**, and **abdomen**. The **head** is where large multi-faceted eyes, long slender antennae, and chewing mouthparts are found. The **thorax** is the middle segment where wings and legs attach. Last is the **abdomen**, which for female bees has a stinger.

Special **pollen-carrying hairs** unique to female bees resemble dense broom bristles, and are commonly found on the rear legs or the underside of the abdomen. Some carry pollen in an almost hairless, flattened **pollen basket** on the rear legs.





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### Mason/ Orchard bees (*Osmia* spp.)

Family: Megachilidae, 5-20mm



**Nest:** Solitary but aggregate; build nursery area from mud in preexisting cavities



**Description:** Small bodies with metallic sheen, various colors, carry pollen on underside of abdomen



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### Longhorn Bees (*Melissodes* spp.)

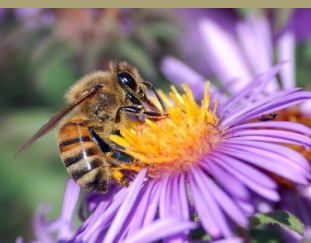
Family: Apidae, 7-20mm



**Nest:** Solitary to communal; in ground, like sandy soil



**Description:** Medium sized, hairy, green or blue eyes, pollen carried on hind legs, males have very long antennae



### Honey Bees (*Apis* spp.)

Family: Apidae, 15-20mm



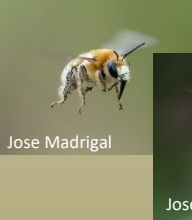
**Nest:** Social, man-made hives or natural cavities



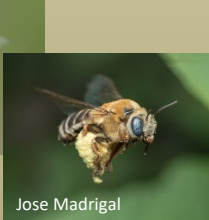
**Description:** Medium size, brown body with banding on abdomen, lightly fuzzy, pollen carried in pollen basket on hind legs



**Random Fact:** Not native to the United States; brought to North America by European colonists



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### Digger Bees (*Anthophora*, *Centris* spp.)



**Nest:** Solitary but may aggregate, in the ground, some in wood

Family: Apidae, *Anthophora*: 12-16mm



**Description:** Medium to large, hairy and fast flying, gray to orangish-yellow in color



**Random Fact:** Called digger bees because they burrow into the ground with their front legs and loosen soil with mandibles

Family: Apidae, *Centris*: 12-20mm



**Description:** Large, densely hairy, often with brightly colored eyes, carry pollen on legs



**Random Fact:** Fast flying, often during hot times of the day; some collect oil in addition to pollen



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### Mining Bees (*Andrena*, *Perdita* spp.)

Family: Andrenidae, *Andrena*: 6-15mm



**Nest:** Solitary; in ground, like sandy soil



**Description:** Small to medium size, slightly fuzzy, color from gray to brown to reddish



**Random Fact:** Can fly at cooler temperatures than other bees, so often first bees seen in the spring

Family: Andrenidae, *Perdita*: 2-10mm



**Nest:** Solitary but may aggregate, bare ground



**Description:** Very small to small, yellow to orange in color



**Random Fact:** Only found in North America; especially common in the Southwestern US and many are specialists and collect pollen from specific blooming plants

### A Bee or Not a Bee?

There are two kinds of insects that are often confused with bees -- flies and wasps. Many flower-visiting flies (e.g. Syrphidae) are bee and wasp mimics in color, form and actions. By mimicking bees and wasps, they gain protection from predators. So, how do you tell these pollinators apart?

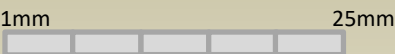
**Fly Identification:** Flies have only one pair of wings, while bees have two pair wings. Flies usually have short, stubby antennae with single hairs, or feathery antennae. They have piercing-sucking or sponging mouthparts. Many flies have large eyes that meet at the top of their heads.

**Wasp Identification:** Wasps have four wings, chewing mouthparts, a stinger in females, and filamentous antennae. Wasps have simple, straight hair on their bodies whereas bees have branched hairs and tend to have hairier bodies. Wasps do not have specialized pollen carrying hairs (although Masarid wasps feed on pollen). Adult wasps feed on nectar while immature wasps (larva) feed on scavenged insects and other arthropods provided by adult wasps.

Now that you know how to tell the difference between bees, wasps and flies, try identifying the insects in the photos below. Answers are at the bottom.



1. Fly 2. Wasp 3. Fly 4. Wasp 5. Bee



Acknowledgements: Thank you to Jose Madrigal for the exceptional photos.