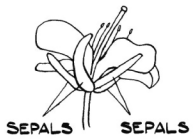
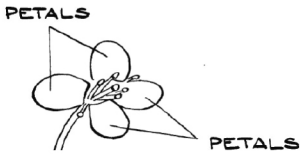
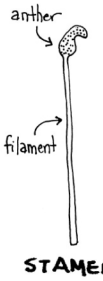
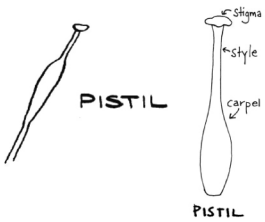
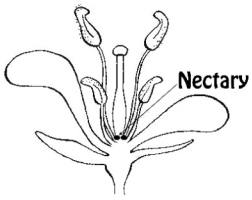
WISCONSIN FAST PLANTS

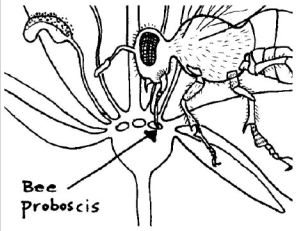
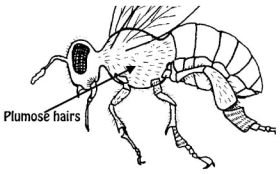
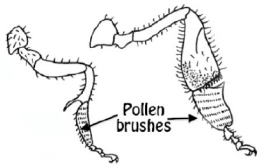
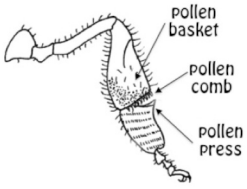
Flowers and Bees

Structures and Functions

Evidence of Structures and Their Functions: Flowers	
Structure	**Function**
	Fast Plant flowers are the reproductive structure of these fruit-producing plants. Although there are many different types of flowers, most flowers have the same basic parts.
	Sepals are modified leaves and are usually green. Early in flower development, sepals wrap around the developing flower, forming a bud that is visible around 8-12 days after planting Fast Plants.
	Petals are modified leaves that are usually colorful. Fast Plants petals are yellow, and they have four. Petals usually serve to attract pollinators to a flower and provide a “landing pad.”
	Stamens are the male parts of the flower that lie inside the ring of petals. Stamens consist of a long stalk or filament with a pollen-carrying anther at the tip. The anthers release pollen after the flower opens.
	Pistils are the female parts of the flower that lie inside the ring of stamens, at the center of the flower. The pistil collects pollen on its sticky top structure, called the stigma. Inside the base of the pistil (called the carpel) are the eggs that will develop into Fast Plant embryos contained inside of seeds when fertilized by sperm. The sperm comes from pollen that successfully stuck to the stigma. When a pollen grain lands on and sticks to a stigma, it grows a pollen tube that extends into the style of the pistil so that the sperm can travel down the tube to meet the eggs contained in the carpel.
	Nectaries are tiny structures around the base of the pistil (see below) that produce a sugary sap. This nectar is highly nutritious and attracts pollinators. The glistening nectar and plump nectary can be visible in a carefully dissected flower.

Source: Bee-ing an Engineer by Wisconsin Fast Plants® © 2017

Structures and Functions (continued)

Evidence of Structures and Their Functions in Pollination: Bees	
Structure	**Function**
	Bees and other pollinators visit flowers to obtain nutrition. Flowers—with their sugary nectar and protein rich pollen—are an important food source for bees. Wings allow bees to fly from flower to flower, and their legs allow them to land on flower petals and move about, seeking nectar.
	The bee's proboscis is a tube-like mouthpart that allows the bee to reach deep into a flower and suck out the nectar. In this feeding process, a bee's body disturbs parts of the flower, picking up pollen from one flower and transferring it to the stigma and pistil of another flower.
	The plumose (feather-like) hairs on a bee's thorax are well suited for collecting sticky pollen. As bees search for nectar within a flower, pollen rubs off of a flower's anthers and gets stuck on these and other body hairs.
 Foreleg	The bee's foreleg has a notched region that contains spines. Bees can rub this part of their forelegs over their heads and antennae to brush off and collect pollen that became stuck there.
 Midleg Hind leg	A bee's mid and hind legs are lined with spines that serve as pollen brushes to collect pollen that sticks to its head, thorax, and forelegs.
 Hind leg	The bee's pollen basket is the final destination for pollen that it collects. Using the pollen comb, the bee transfers pollen from the pollen brushes onto the pollen press. By flexing its leg, the pollen is packed into pollen baskets, which are enclosed by long, rigid hairs. When a bee's pollen baskets are full, it returns to the hive, bringing pollen to feed its colony.

Source: Bee-ing an Engineer by Wisconsin Fast Plants® © 2017