



lôok around

New York City

THE BIRDS AND THE BEES AND THE FLOWERS AND THE SEEDS

Spring is an exciting time in New York City. Trees that looked dull and gray all winter are suddenly bright green and leafy. Flowers spring up everywhere: in window boxes, along wide avenues, even wedged between narrow sidewalk cracks.

Birds can be heard in even the smallest park. **LOOK FOR** bees, butterflies, and bugs zipping from one flower to the next. New Yorkers who suffer from allergies sneeze and wheeze when they breathe in tree pollen floating through the air.

Here plants that shed their leaves in the fall stop growing and making food during winter. Then they wake in the spring to carry out their most important job: reproduction (the creation of new plants).

Flowering plants, including all the trees and bushes in New York, make new plants by moving pollen, a fine powder, from one flower to another. This process is called pollination. Birds, insects, or the wind move pollen from flower to flower.

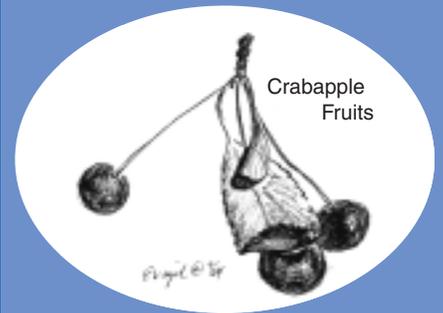
Attracted by a flower's smell or bright colors, birds and insects **LOOK FOR** a meal of sweet nectar, moving pollen from one flower to the next at the same time.

The pollen combines with the ovules (a female part) to make seeds. Then the petals wither and fall and the flower base, or ovary, grows into a fruit. Fruit can be fleshy and soft like a crab apple, or dry and hard like an acorn, or small and light like a winged maple fruit or dandelion puff.

Some fruits can be seen in late spring and summer, while others appear in the fall.

Acorns drop to the ground by the thousands and are hidden away by squirrels as winter food. Many are eaten, but plenty are forgotten, only to sprout in the spring.

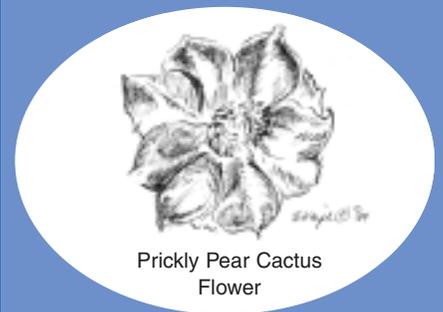
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Crabapple
Fruits



Tulip Tree
Flower



Prickly Pear Cactus
Flower



The acorn is the fruit of
oak trees.



LOOK AROUND

By examining the shape and size of seeds and fruit that you find in a park or garden, you can figure out how the seeds are spread away from the parent plant.

LOOK CLOSELY at a fruit. If you see spines or hooks that look like Velcro® (burdock and beggar's-ticks) or if the seed is sticky (mistletoe berries), it is spread by hitching a ride on an animal.

If a seed is attached to what looks like a helicopter propeller (maple fruit), half of a propeller (tulip tree seeds) or a fluffy



Tulip Tree Seed Cluster

parachute (dandelion, milkweed, cattails, and thistle), it is spread by wind. It is

also spread by wind if it spins and twirls when you toss it in the air.

If it floats when placed in water, it probably uses water to spread.

If it comes in a pod that pops open when touched (jewelweed), the seed gets pushed away.

If the seed is big and you can see teeth marks in some of them (acorn, bechnut, black walnut), an animal will probably eat it right away, or hide it to be eaten later.

Animals also eat seeds that are covered by soft pulp (berries, rose, ginkgo). **-cc**



Ginkgo Fruit

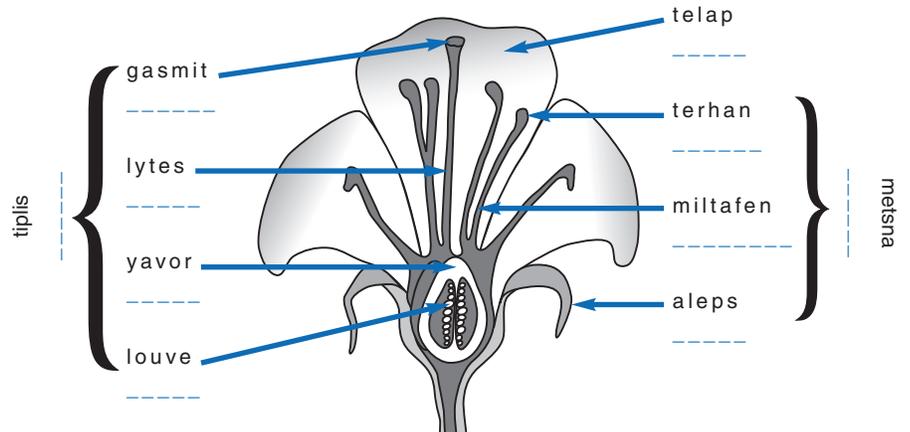
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Other fruits, such as holly berries, are eaten by birds, which drop the seeds far away. The seeds then sprout into a new plant.

Some fruits hitch a ride on an animal's fur or float downstream or are carried by the wind. Either way, many find rich soil and sprout into new plants, and the cycle of growth begins again. **-cc**

Learn Your Flower Anatomy

Unscramble the words describing the various parts of a flower using the list below. Find the answers on page 4.



Courtesy of Urban Park Rangers, City of New York Parks & Recreation.

DAVID GRAVES, CITY BEEKEEPER



David Graves with one of his rooftop beehives. Photo by Nancy Rica Schiff.

David Graves grew up (and still lives) in western Massachusetts, the famous Berkshire Mountains. He and his wife sell jelly and jam and syrup. Their company is called Berkshire Berries, named after the place where they live.

David decided to get into beekeeping as a challenge: to learn something new and to add honey to their product line.

About ten years ago David started selling his products at the Greenmarket™ at Union Square in Manhattan, a four hour drive from the Berkshires. Customers asked for honey made from flowers growing in New

LOOK IT UP: www.backyardbeekeepers.com



York City, because they believed that local honey would build up their immune systems against allergies.

David decided to find places in New York City away from people, but near a lot of flowers. Since he didn't know anyone here he put out a little box with live bees and a sign saying, 'We're very gentle. We'd like to share our New York City honey. Do you have a rooftop?'

David now has 17 hives on Manhattan, Bronx and Brooklyn rooftops, but it's a secret exactly where they are.

David calls the honey from his New York City hives NYC Rooftop Honey. He even sells it back home in Massachusetts.

David says, many people think beekeeping is dangerous. But, he says, honey bees are very gentle. Most people are thinking of wasps and hornets when they think about people being stung. Bees will protect their hive, which is their home, if it is disturbed, and might sting then. Beekeepers have to learn the right way to handle them. Many of them wear a protective, one-piece "bee suit" and a mask and gloves.

They use a "smoker" to calm down the bees in a hive before they open it up to take out the honey.

Continued on page 4



MORE ABOUT HONEY



Honey bees were domesticated (specially raised to produce food for humans) thousands of years ago; they were brought to the American continents by European settlers.

Female worker bees suck nectar (a sugary liquid) from certain flowers. They bring it back to the hive and put it into a cell (six-sided cylinder made of wax). Other female worker bees add enzymes to it from their mouths. This changes the chemistry a little bit. More female worker bees fan the air to remove water from the honey and make it thicker.

When the honey is thick enough, worker bees put a wax cap on the cell. This preserves the honey until the bees use it as food.

Beekeepers use artificial hives that let them take away some of the honey to be eaten by people.

Bees visit different flowers at different times of the year. Honeys from different flowers taste different from each other and are different colors, too.

Whenever you **LOOK AT** big, white or colorful flowers, you will probably also see bees busy gathering nectar. City bees **LOOK FOR** flowers blooming in people's yards and on apartment

rooftops. They also visit street and park trees and community gardens.

-NG-W

Click on "Honey Bee Facts"

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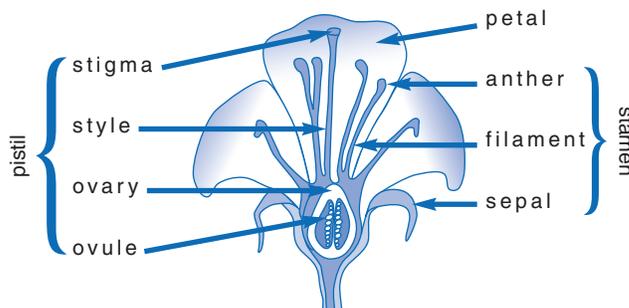
Although there are other people who keep bees in New York City, David is the only one who has large amounts of honey to sell. This is so unusual that David gets interviewed all the time.

Berkshire Berries has a booth at the Union Square Greenmarket™ on Monday, Wednesday and Saturday (East 17th Street, Broadway and Park Avenue South; 8am to 6pm year round). They also have a booth at the 77th Street and Columbus Avenue Greenmarket™ on Sundays (10am to 5pm year round). Both are in Manhattan. **-NG-W**

FOR TEACHERS AND GROUP LEADERS

David Graves will bring an empty beehive, pictures and some of his beekeeping equipment on one of his regular Greenmarket™ days if a group requests it. If the temperature is below 75° he will show his glass-front observation beehive. You can contact him at: Berkshire Berries, 1352 Main Street, Becket, MA 01223; 413-623-5779; www.berkshireberries.com.

Answers to Flower Anatomy



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New York City Audubon
71 West 23 Street
New York, NY 10010
212-691-7483

lanyc@nycaudubon.org
www.nycaudubon.org

Naola Gersten-Woolf:
Publisher & Managing Editor

Jean Lynch: Editor

Cecelia Rogers: Art Director

E. J. McAdams: Executive
Director

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CHRISTINA COLÓN is Curator of Curriculum Development and Evaluation at the New York Botanical Garden.

ELIZABETH VIGIL has been drawing since she was six years old, and is now returning to school as an adult to learn package design. Her drawings are copyright © 2004 and used by permission.

NAOLA GERSTEN-WOOLF is the Publisher and Managing Editor of *Look Around New York City*. She is interested in environmental education and NYC's trees.

CECELIA ROGERS is a graphic designer. She created the new look for *Look Around New York City*.

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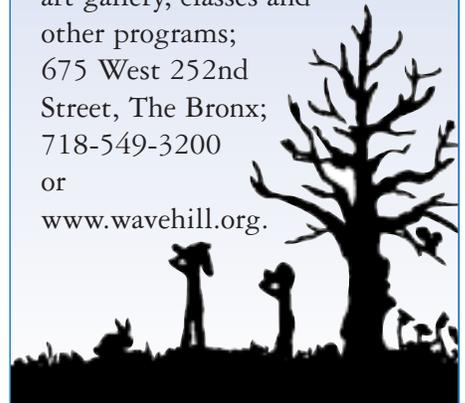
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GO WITH A GROWNUP

A visit to the New York Botanical Garden in the Bronx is a great way to see and learn more about many different plants. A good place to start is the Everett Children's Adventure Garden. (There is an extra fee for the Children's Garden.) New York Botanical Garden is at 200th Street and Southern (Kazimiroff) Boulevard, The Bronx. For information check out 718-817-8700 or www.nybg.org; for classes call 718-817-8157.

You can see working beehives in New York City at the Queens Botanical Garden, where they are in the middle of the Bee Garden planted only with colorful, nectar-bearing flowers. School classes can sign up for a class about bees or plants or trees; 43-50 Main Street, Flushing; 718-886-3800 or www.queensbotanical.org.

There are beehives at Wave Hill, but there aren't any signs or other information to tell you about them. They are near the Woodland along the Woodland Trail; ask at the reception desk for directions. Wave Hill has gardens, two historic houses, an art gallery, classes and other programs; 675 West 252nd Street, The Bronx; 718-549-3200 or www.wavehill.org.



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