

Why do we care about Honey Bees?

The Bee Book

Häagen-Dazs

hd  hb

Häagen-Dazs loves Honey Bees™

The Society of the Hive

Everything bees do is for the good of the hive.

Honey bees live in large groups called colonies. There are approximately 10,000 to 60,000 bees in each colony.¹

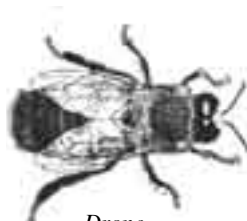
Wild honey bees live in hollow tree trunks, caves, or holes in rocks. People who raise bees make wooden boxes, straw mounds, or pottery containers for them.¹

Meet the Bees!

There are three kinds of honeybees: Workers, Drones, and Queens.



Worker



Drone



Queen

WORKERS:

The smallest bee at 1/2" in length. They are female and live six weeks. Their chores include: making honey, cleaning the hive, guarding, cleaning and feeding the queen, feeding the drones, feeding the larva, building the wax combs, and visiting the flowers.

DRONES:

One hundred Drones live in each colony. They are male and live eight weeks. They are 5/8" in length, and they mate with the queen. They do not sting.

QUEENS:

The largest bee at 3/4" in length. They are female and there is only one per colony. She lays up to 2,000 eggs per day. She mates with the drones. She does not have black stripes. And she lives up to four years.²

The Queen Bee

Facts:



-There is one queen for each colony of bees.

-The Worker larva is taken to a special queen cell (which looks like a peanut). The queen larva is fed a special 'royal jelly,' and a glandular secretion, made by the worker bees.

-When the queen hatches, there is a small group of hive bees who make up the queen's court. These bees care for and feed the queen. The queen is the largest bee in the hive.

-After five days, the nuptial flight outside of the hive takes place. The queen mates with many drone bees from other colonies and then returns to the hive with enough sperm to successfully lay fertile eggs for many months and years ahead. She does not ever need to mate again and yet she can continue to lay up to 2,000 eggs a day! This is her only job in the hive society.

-If the hive becomes overcrowded, many of the bees take the queen and leave the hive. This is called swarming. The old hive needs a queen so the bees build queen cells and feed and nurse the baby Queens inside the cells. When they hatch, they fight and the strongest wins and becomes the new hive queen.³

Honey Bees Can Dance! Can You?

Bees show other bees where there are flowers by dancing on the honeycomb in their hive. The most common dances are THE ROUND DANCE and THE WAGGLE DANCE.⁴

The Round Dance

This dance tells the bees that flowers are close to the hive or less than 100 yards away. The dancing bee walks in a circle, then turns around and goes the other way. The other bees go outside and fly in a circular pattern near the hive until they find the flowers.

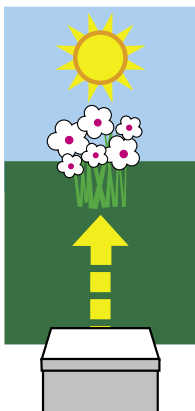


The Waggle Dance

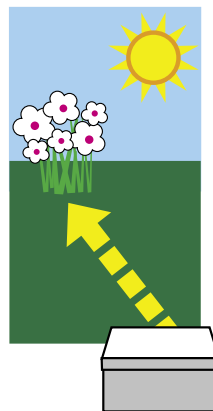
This dance communicates to the other bees that a food source is far away, where to find the flowers and how far they need to go. It also tells which way to fly. The dancing bee makes a figure-eight. She waggles her body on the middle line.



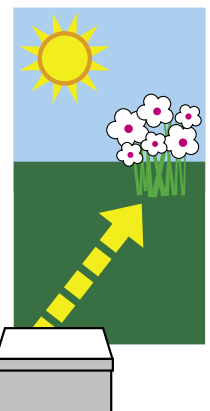
If a bee waggles straight up, the other bees fly toward the sun.



If a bee waggles to the left, the other bees fly to the left of the sun.



If a bee waggles to the right, the other bees fly to the right of the sun.



What is Pollination?

The honey bees greatest contribution to the world
is a service of POLLINATION.



While the worker bee crawls around a blossom, the bee is dusted with pollen.



The bee flies to another blossom, carrying pollen in her branched hair.



When the bee lands, pollen falls onto the new blossom's stigmas. Now a flower will grow.

- A bee flies through the meadows, fields, orchards, and gardens visiting flowers and carrying pollen from one flower to another. This helps the plants form fruits and seeds.⁵
- Each flight is about one hour. Each bee makes about 10 flights per day.⁶
- The bee gathers water, bee glue (for the hive), nectar (for honey), and pollen. A bee visits 50 to 100 flowers a flight!⁶

Fun Facts About Honey Bees



Bees have been producing honey for at least 150 million years.⁷



Honey bees aren't native to North America. They were brought from Europe by settlers in the 17th century for their honey (the main sweetener) and for their wax (for candles).⁶



Honey bees are the only insects that produce food for humans.⁷



Honey bees are responsible for pollinating one-third of all the foods we eat.⁸



Honey bees are responsible for the pollination of more than 100 crops, including fruits, vegetables, nuts, and seeds, providing 80 percent of the country's pollination services.⁸



The honey bee is responsible for \$15 billion in agricultural crops each year. The California almond crop alone uses 1.3 million colonies of bees for pollination, approximately one-half of all the honey bees in the United States.⁸



An average worker bee will only make 1/12 of a teaspoon of honey in its lifetime.⁷

We have a Honey Bee Problem.

CCD: Colony Collapse Disorder!

What is Colony Collapse Disorder?

It is a little understood phenomenon in which worker bees in a beehive or colony abruptly disappear.

We have a real problem! Did you know that honey bees are disappearing? And did you know that honey bees are VERY important? The scientific name for these fuzzy black and yellow insects is *Apis mellifera*.

Bees are honey makers but the most important job they perform is pollination. One out of every three bites of food we eat and drink is animal pollinated! And, all kinds of wildlife depend on pollinated plants for food.

Many plants and trees are pollinated by honey bees: apples, apricots, avocados, cherries, strawberries, raspberries, grapes, and blueberries, peaches, pears, pumpkins, squash, watermelons, plums, cranberries, cantaloupes, cucumbers, soybeans and almonds! In fact, almond crops use 1/2 of the honeybees in the country!

The problem is so big that the University of California at Davis, Penn State, The National Honey Bee Board, and other groups are studying Colony Collapse Disorder (CCD).

Over the last several winters, more than 25 percent of the honey bee population in the United States has vanished. Scientists do not know why the bees are disappearing. There are several suspected reasons for the collapse:

- Mite infestation
- contamination from pesticides
- malnutrition or poor nutrition (weather/drought related)
- an unknown fungus
- manner in which hives are transported

To unravel the mystery read more at www.helpthehoneybees.com

Some congressional leaders have introduced legislation to help research, protect, and maintain America's bee population. In the meantime, you can help by planting a bee-friendly garden to grow a new source of food for the honey bees.

That's why the Häagen-Dazs brand is funding research to help the cause.⁹

Plant Your Own Honey Bee Garden

anemone
apple blossom
aster
azelea
begonia
bee balm (monarda)
black-eyed susan
blue cowslip
bluebell
camelia
carnation
chrysanthemum
coneflower
crocus
daffodil
daisy
dandelion
dogwood
edelweiss
forget-me-not
forsythia
freesia
fuchsia
gardenia

geranium
gladiolus
goldenrod
heather
hibiscus
hollyhock
hyacinth
hydrangea
hyssop (agastache)
jasmine
lady's slipper
lantana
lilac
marigold
mint
narcissus
orchid
pansy
peach blossom
peony
petunia
pincushion flower
(scabiosa)
purple coneflower

ranunculus (buttercup)
rhododendron
rose
salvia (sage)
snapdragon
sunflower
sweet pea
thistle
thyme
tulip
violet
yarrow
yucca
zinnia

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Honey Bee Find-A-Word

D	B	L	A	C	K	B	U	S	Y	F	G
H	R	A	I	X	Y	W	S	T	I	N	G
O	O	O	J	W	H	A	H	C	O	M	B
N	B	N	N	C	V	X	E	G	E	F	W
E	A	B	E	E	K	E	E	P	E	R	O
Y	Q	B	G	Y	Y	E	L	L	O	W	R
C	U	E	A	D	B	L	A	R	V	A	K
O	E	E	R	W	I	E	T	C	U	D	E
L	E	S	D	I	N	S	E	C	T	S	R
O	N	W	E	N	C	C	D	R	B	K	N
N	K	A	N	G	H	E	X	A	G	O	N
Y	Z	X	N	S	M	L	Q	S	Q	V	T
L	A	J	O	P	R	P	U	X	O	W	M

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honeybee
beekeeper
insect
wings
colony

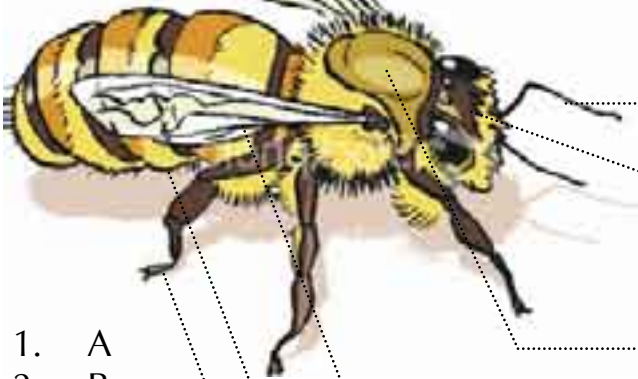
honey
wax comb
larva
queen
drone

worker
hexagon
garden
CCD
beeswax

black
yellow
sting
busy

Name The Parts of a Honey Bee

Using the Alphabet Key fill in the blank spaces to answer the questions.



1. A
2. B
3. C
4. D
5. E
6. F
7. G
8. H
9. I
10. J
11. K
12. L
13. M
14. N
15. O
16. P
17. Q
18. R
19. S
20. T
21. U
22. V
23. W
24. X
25. Y
26. Z

1 14 20 5 14 14 1

8 5 1 4

20 8 15 18 1 26

20 23 15 16 1 9 18 19

15 6 23 9 14 7 19

1 2 4 15 13 5 14

19 9 24 12 5 7 19

Did you know bees live everywhere on earth except for the

1 18 3 20 9 3 and

1 14 20 1 18 3 20 9 3 1 ?⁸

Fun Math Honey Bee Facts

Do the math problems to learn more about honey bees.

1. Bees have been producing honey for at least

$(3 \times 50 =)$ _____ million years.

2. Honey bees wings beat $(3 \times 3,800 =)$ _____
times per minute.

3. Honey bees flight speed averages only

$(3 \times 5 =)$ _____ miles per hour.

So, how far can a bee fly in 3 hours? _____

4. A single honey bee hive contains approximately

$(10+10+10+10+10+10 =)$ _____ thousand bees.

5. In the course of her lifetime, a worker bee will produce only

$(\text{reduce } 3/36=)$ _____ of a teaspoon of honey.

6. A worker bee lives for about $[(3 \times 9) + 3=]$ _____ days.

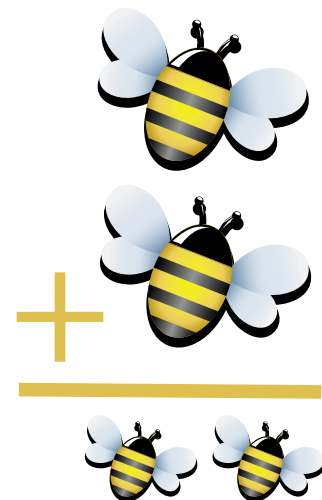
7. To make $(1/4 + 1/4 + 1/2 =)$ _____ pound(s) of honey,

workers in a hive fly $(5 \times 11,000 =)$ _____ miles and

tap $(4 \times 500,000 =)$ _____ flowers.

8. The queen bee mates once in her lifetime and can lay up to

$(5 \times 400 =)$ _____ eggs in a day.



Fun Math Honey Bee Facts

Do the math problems to learn more about honey bees.

9. A honey bee has $(8 - 4 =)$ _____ stomachs.

10. A worker bee can only sting $(9 - 8 =)$ _____ time(s)
and then it dies.

11. To make one pound of honey, a colony of bees collects
nectar from over $(2 \times 50,000 =)$ _____ flowers.

12. There are about $(5,986 + 14,014 =)$ _____ types of bees
in the world.

13. Honey bees supply the world with about 1,000,000 tons of
honey. One ton is $(4 \times 500 =)$ _____ pounds.

14. Honey bees have $(1,700 + 1,300 =)$ _____ tiny eyes
in each big eye to see ultraviolet light.



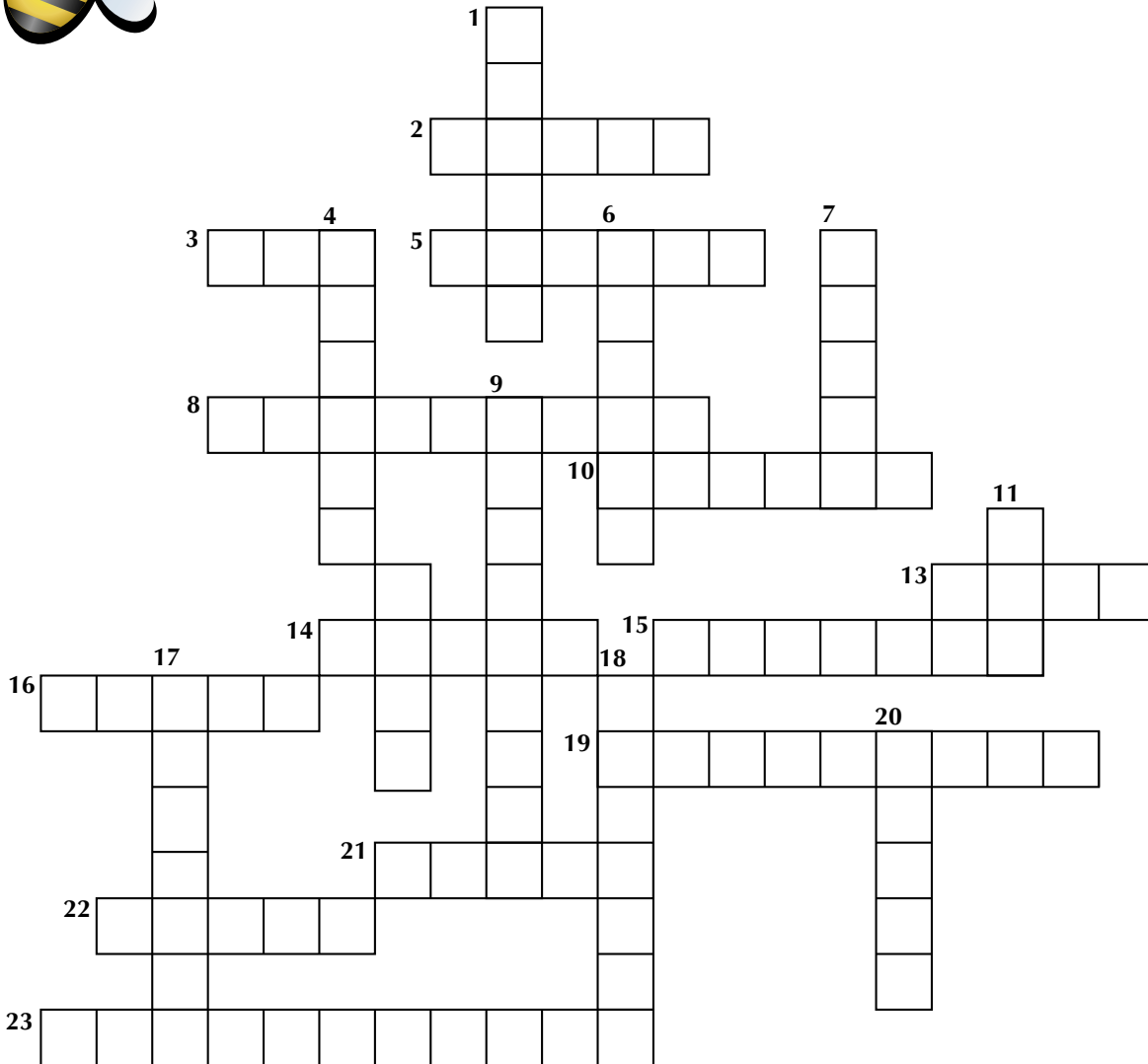


Foods Pollinated by Honey Bees!

Can you put them in alphabetical order?

- | | |
|----------------|-----------|
| 1. Blueberry | 1. _____ |
| 2. Turnip | 2. _____ |
| 3. Pumpkin | 3. _____ |
| 4. Orange | 4. _____ |
| 5. Strawberry | 5. _____ |
| 6. Apple | 6. _____ |
| 7. Raspberry | 7. _____ |
| 8. Avocado | 8. _____ |
| 9. Squash | 9. _____ |
| 10. Onion | 10. _____ |
| 11. Plum | 11. _____ |
| 12. Watermelon | 12. _____ |
| 13. Radish | 13. _____ |
| 14. Cherry | 14. _____ |
| 15. Pear | 15. _____ |
| 16. Almond | 16. _____ |
| 17. Cranberry | 17. _____ |
| 18. Eggplant | 18. _____ |
| 19. Cucumber | 19. _____ |
| 20. Asparagus | 20. _____ |
| 21. Peach | 21. _____ |
| 22. Grape | 22. _____ |
| 23. Apricot | 23. _____ |

Honey Bee Facts Crossword Puzzle



Across

2. Honey bees have yellow and _____ stripes.
3. The acronym for Colony Collapse Disorder is _____.
5. In order to cook, you read a _____.
8. The worker, drone and queen are types of _____.
10. Honey bees live in a group called a _____.
13. Bees in a _____.
14. The sweet nectar the bees make is called _____.
15. _____ is used to seal the honey cells closed.
16. Honey bees have two sets of fluttering _____.
19. Bees are an important, vital part of our _____.
21. The worm-like creatures are called _____.
22. Oranges and apples are a kind of _____.
23. When bees carry pollen from one flower to another, it is called _____.

Down

1. The yellow spore of a seed plant is called _____.
4. The male bees are called _____.
6. The honey bee is a type of _____.
7. The leader of a colony is the _____ bee.
9. A person who raises bees is called a _____.
11. Bees have _____ legs.
12. The honey _____ is made of wax hexagons.
17. Honey is nature's _____ sweetener.
18. A 6-sided polygon is called a _____.
20. A bee _____ can hurt!!!

Honey Bee Paper Chain

Directions:

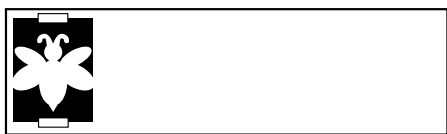
1.

Reproduce the pattern, enlarging or reducing the pattern to suit your purpose.



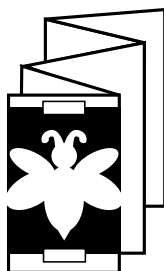
2.

Tape the pattern to the edge of a strip of construction paper at least as tall as the pattern.



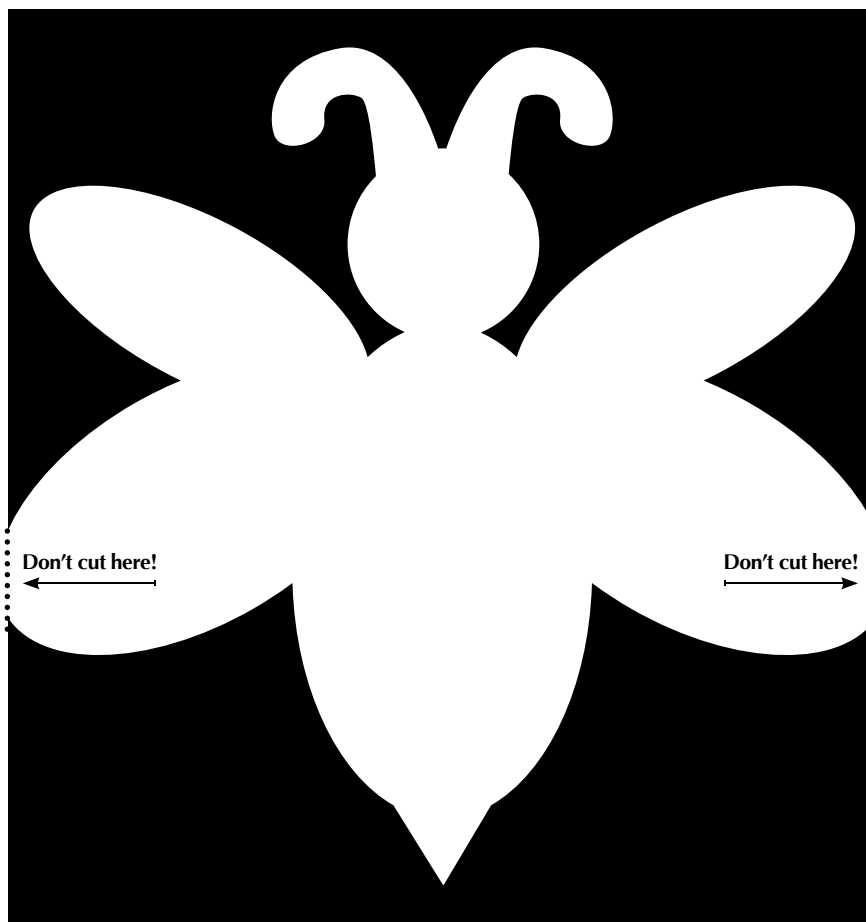
3.

Fold the strip of paper into an accordian fold that is the width of the pattern.



4.

Cut out the pattern, taking care not to cut on the dotted edges.

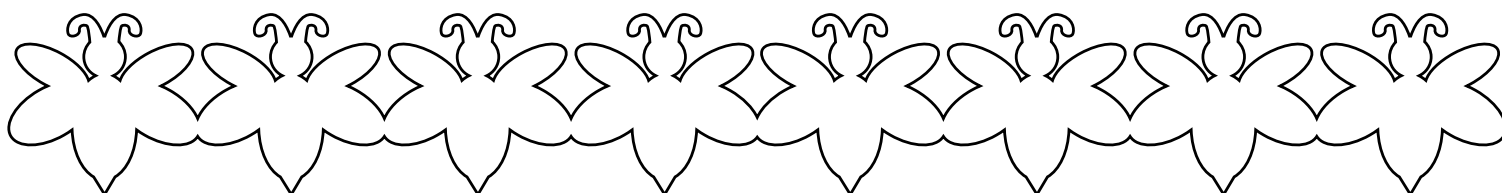


5.

Unfold the pattern and cut as many as you need for the project.

6.

Color them with bright stripes!



Bee a Bookworm!

Cut out the bookmark and glue to a heavy cardstock. Trim edges.



Spread
your
wings
and
fly away
with a
good
book!

Write a Great Bee Book Report

Start at the bottom of the pyramid and work your way up to the top.

How?

Why?

What?

When?

Where?

Who?

Author?

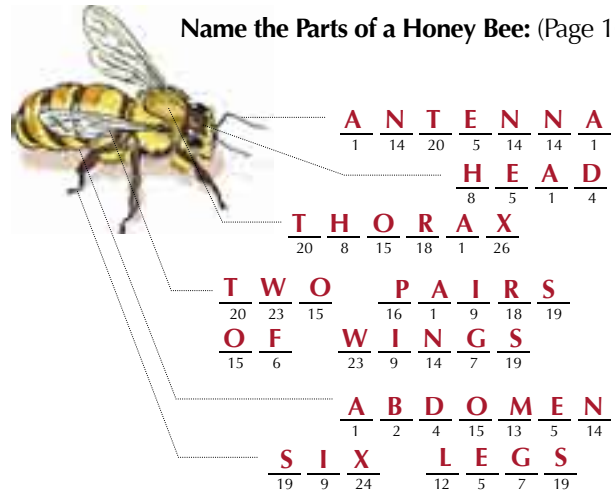
Name of Book?

Bee Book Answer Key

Honey Bee Find-A-Word: (Page 9)



Name the Parts of a Honey Bee: (Page 10)



Did you know bees live everywhere on earth except for the

A R C T I C and **A N T A R C T I C A**

Fun Math Honey Bee Facts:

(Pages 11)

1. 150
2. 11,400
3. 15 miles, 45
4. 60
5. 1/12
6. 30
7. 1 pound
55,000
2,000,000
8. 3,000

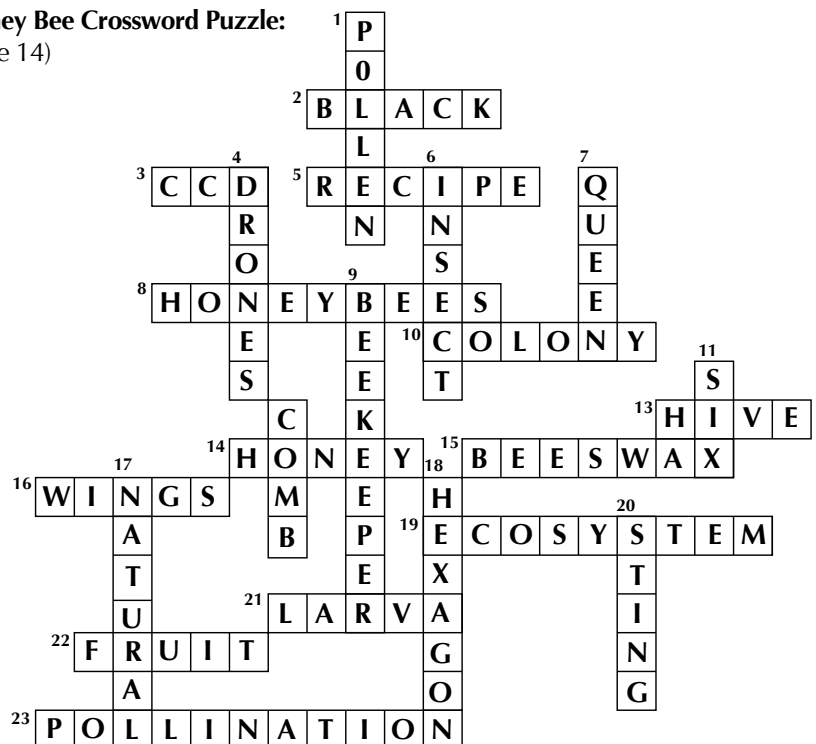
Foods Pollinated by Honey Bees

(Page 13)

1. Almond
2. Apples
3. Apricot
4. Asparagus
5. Avocado
6. Blueberry
7. Cherry
8. Cranberry
9. Cucumber
10. Eggplant
11. Grape
12. Onion
13. Orange
14. Peach
15. Pear
16. Plum
17. Pumpkin
18. Radish
19. Raspberry
20. Squash
21. Strawberry
22. Turnip
23. Watermelon

Honey Bee Crossword Puzzle:

(Page 14)



Fun Math Bee Facts

(Page 12)

9. 2
10. 1
11. 100,000
12. 20,000
13. 2,000
14. 3,000

Bee-bliography



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