

All About Bees

Unit Study



by

BrandenburgStudies

Get the most from your Unit Study...

There is a “Code” that is located at the top left-hand corner of your Student Lesson. For “All about Weather”, it is

Bees07

In the event that you find that there is a “dead” link (due to the nature of the WEB, unfortunately that sometimes happens), or you wish to receive our FREE upgrades, contact Brandenburgstudies at:

debbiebrandenburg@sbcglobal.net

being sure to give us the Code: Bees07

We update our Unit Studies every June and December—to try and insure that there are no “dead links” and to upgrade to even better resources for our lessons. WEB sites occasionally change—but our commitment to you never will—our upgrades are free for as long as you need them.

As you look over the material that has come with your unit Study, here are some suggestions:

Look over the Daily Lesson Plan—Print out a copy for your student and one for you, the instructor. Be sure that the student posts his/hers in a place that is easy to locate and refer to. Most of our students place theirs inside the front or back cover of the notebook. Familiarize yourself with the daily assignments; print out handouts for the day's assignment. Oversee the student(s)' work—not only seeing that all assignments are completed in a timely manner, but they are done “thoroughly” and “neatly” as well. (This is a great opportunity for your student(s) to begin learning to be responsible for their own work.)

It is highly suggested that you have the computer the student works on, be up-to-date in software, so that the Unit Study can be best utilized. (These are all “freeware” and mean no expense to you)

Update your Adobe Acrobat Reader to 7.0 or 8.0

[Adobe Acrobat Reader 8.0](#)

Macromedia Shockwave

[Adobe Shockwave Player](#)

Real Player

<http://www.real.com/>

Before the student starts the Unit Study, look over the Suggested literature and Videos. We have found that the more you can incorporate into a student's learning—the better the retention and the higher the interest. The Suggested books are age-appropriate and of “good” reading. Most can be found at your local public library. A quick online search of your library's database will let you know which ones it carries. Select from that list (either you select for the student, or give them a choice) and request 1-2 books. Depending on the student's reading abilities, we tried to make daily reading assignments that would take the student 30-40 minutes daily—as part of the Literature Curriculum. By doing that, several books can be read in the course of the study. Of course, you can also pick a book or 2 to read aloud in the classroom as well. :-)

Do the same for the Video list--(if you have class time to do that)

At the end of the Unit Study is a test and then a list of suggested projects. Projects are a terrific way of "seeing" what the child has learned. I highly recommend you do at least one. Organizational skills can be taught; writing skills; art; etc—by doing a project. Decide ahead of time which one(s) you would like to do. If possible, give your student an opportunity to pick one as well.

All About Bees

Unit Study

On CD-ROM



Bees fascinate us and terrify us. Yet as you go through this Unit Study, you will learn that bees are amazing little creatures; created by an amazing God; and of incredible importance on this earth. And they are not as dangerous as you think. So, with those thoughts in mind...

.lets begin! ☺



A. **God Created the Bee:** In the beginning.....

Read Genesis chapter 1: (see creation handout project) When do you think bees were created?

Did you know that the “dance of the bees” is evidence of “intelligent design”? (In other words, Creation!) Read the following WEB link to learn more:

[Dance of the honeybee: amazing evidence of creation](#)
[Further evidence of creation](#)

- B. The Bee Family: A family (or “Colony”) of bees is very different from our own families. In your family, you have a Mother and a Father, and maybe a brother and sister, or two. But in the bee family, there is one mother bee (or “Queen” bee), several “Drones” (Father Bees), and thousands upon thousands of worker and baby (larva) bees! It is truly amazing!
- 1.) The Queen Bee: a family of bees will only have one queen or mother bee.
Use your handouts and the WEB links below to learn more about this amazing creature.



- 1.) Drones: These are the “Daddies” of the hive.



The Drone Bee

The drones are the male bees in the colony. Their sole purpose is to mate with the queen. Drones who succeed, die in the act.

Drones are larger and heavier than the workers, but not as long as the queen. It is easy to identify a drone by its large compound eyes that come together at the top of the head.

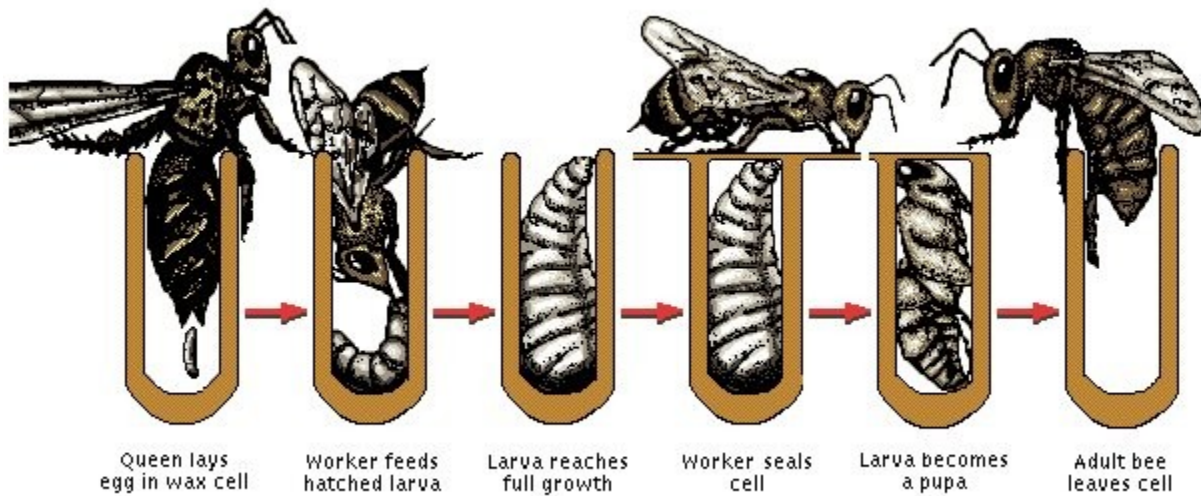
- 2.) The “Worker” Bees: The Worker bees are the tireless workers that you see buzzing around from flower to flower, and do everything in the hive—from gathering food, to caring for the baby bees, to waiting on the Queen. Use your handouts and the WEB links below to learn more about these busy little creatures:



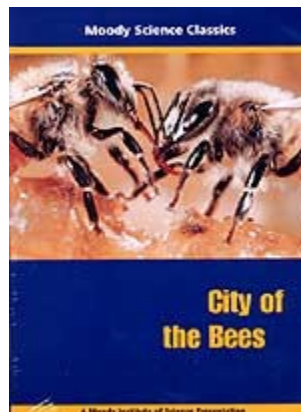
[About the Worker Bee](#)

Get a handout on Worker Bees from your instructor. Go over it together

- 3.) **Baby (Larva) Bees:** Baby bees do not look ANYTHING like their parents. They are known as “Larva” and are absolutely helpless and need constant care and feeding. Use your “Life Cycle of the Honey Bee Worksheet” and the WEB links below to learn more about these little darlings 😊



Now might be a good time for you to spend your next classroom time for science viewing Moody Bible Institute's “City of Bees”.



- 4.) **The Bee Home:** A Bee home consists of a “colony—a

very large group of the Bee family you just learned about. Get your “Hive Handout” from your teacher. Go over the handout in class, and then use the WEB link below to do a **Virtual Tour** of a Honey Bee Hive ☺.

[NATURE: Alien Empire - Enter the Hive](#) Use this Web link to begin learning about a bee home (or hive). Follow the WEB links until the conclusion. (This is a great interactive WEB site—so have fun!)

5.) What do Bees Eat?



When a bee enters a flower, it has to go deep down to get to the nectar. While it drinks nectar, the bee gets covered with pollen. The bee also collects the pollen in its pollen basket (part of its hind legs). When the bee moves on to another flower, some of the pollen from the first flower rubs off on the second flower. This is pollination. Now the plant will drop its flower and make a fruit with seeds in it. The seeds may grow into a new plant. The bees cannot live without the plants and the plants cannot live without the bees.

[What Do Bees Eat?](#)

1.) Honey and the Honey Comb



One of the chief functions of the hive is the production of honey comb. Let's take a closer look at that.

[What is Honey?](#)

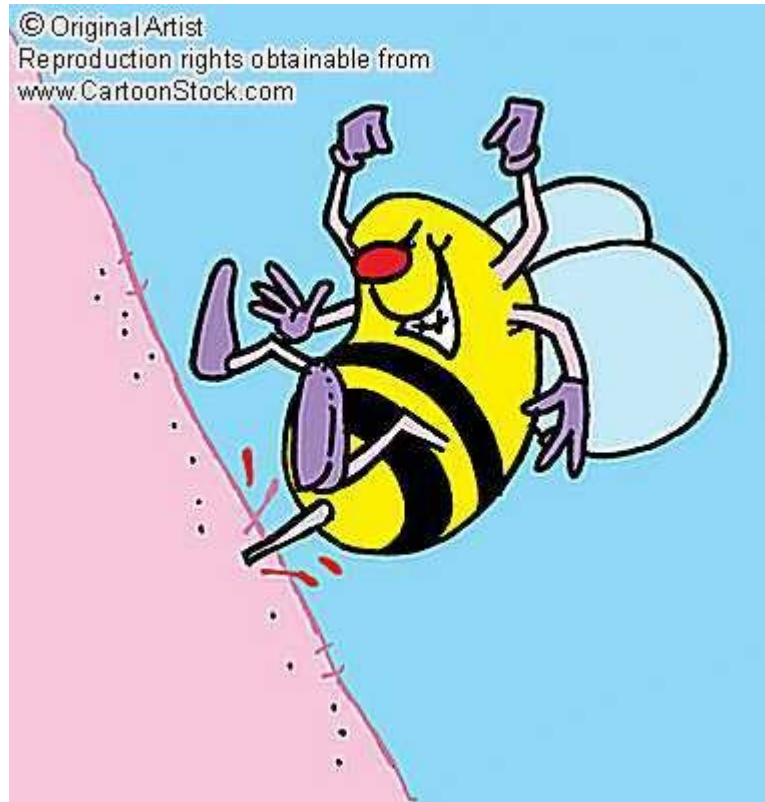
[How the Bee tells the Hive where the Flowers can be Found](#)

- 2.) Enemies of the Hive: Yes! Bees have enemies. Learn about the different types by clicking on the WEB link below.

[Bee Enemies](#)



- 3.) Why Bees Sting: A bee sting is something nearly all of us have experienced as we have played outside. Learn more about the bee's stinger and first aid



Get your Bee sting Handout from your teacher
[Video of bee stinging person](#)

Bonus!! Let's have Fun!

[bees word search](#)
[Tumble Bee Game](#)
[To Be or Not To Be \(Bee\) Game](#)
[3 Great Games](#)
[Killer Bee Game](#)
[The Amazing Bee Cam](#)
[Bee Games and Coloring Pages](#)

Suggestions for Teachers

This unit is just chocked full of things for your student(s) to learn and enjoy. Here are some suggestions before you begin:

Peruse through the Student section (“All About Bees”) to determine how much you want to do each day. Obviously that depends on the grade level of the student(s).

Look at the different suggested videos, literature, and crafts (before you begin the unit) and try to “collect” all items you wish to use to enhance your class time

As you begin working through the lesson, incorporate as many of the activities, crafts, etc as you can.

Be sure to have the handouts read to distribute.

Incorporate as many literature selections as possible—reading at least 1 each day.

And see if you can obtain a copy (borrow from your homeschool group, a church, library, etc) of the Moody Bible Institute's videos—they are well worth all the effort it takes to get them. They are extremely well done!

And above all -- Have Fun!!!

BrandenburgStudies

www.freewebs.com/brandenburgstudies/

Literature Suggestions of All About Bees

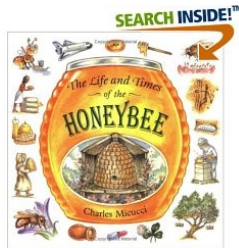
Place your cursor over the photo and click—you will be taken to Amazon.com to see more information about the book and author. You can probably find any of these books listed below in your local public library, but you can also purchase your own copies, if you like.



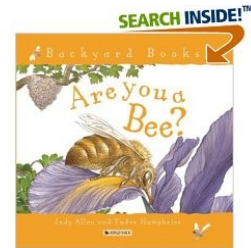
by Patricia Polacco,

Judy Allen

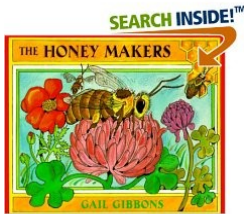
Reading level: Ages 4 – 8



by Charles Micucci



by



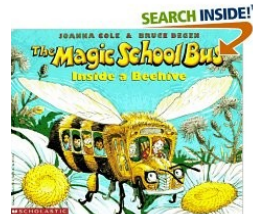
by Gail Gibbons

The Honeybee and the Robber

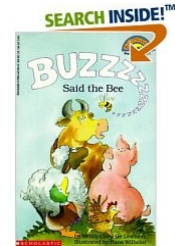


a movingpicture book by Eric Carle

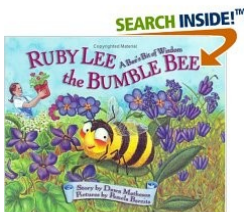
by Eric Carle



by Joanna Cole



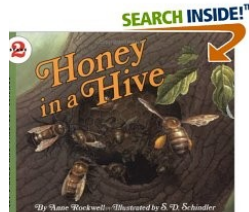
by Wendy C. Lewison



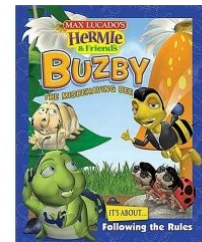
By Dawn Matheson



by Dawn Bentley



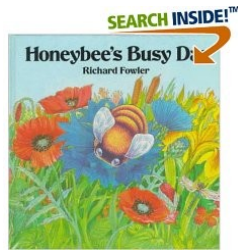
by Ann Rockwell



by Max Lucado



By Denise
Brennan-Nelson



by Richard Fowler



by Gallimard
Jeunesse



by the Editors of
TIME for Kids



Buzzy Bee and Friends (Online stories for Children)

<http://www.magickeys.com/books/bee/index.html>

The Story of the Royal Jelly

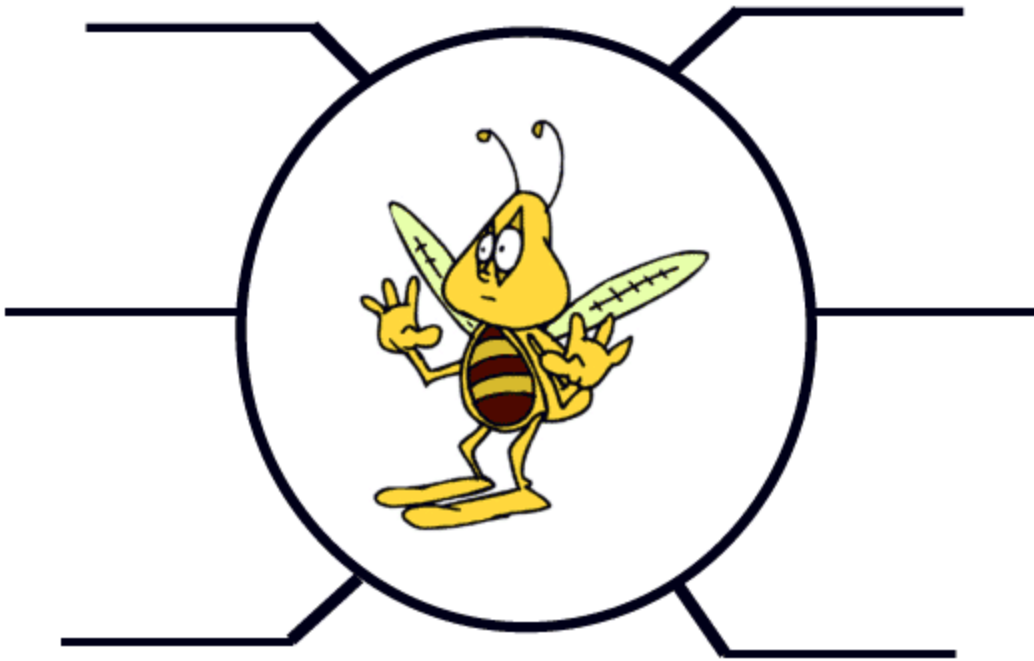
All out of Royal Jelly

The rest of this e-document is just “loaded” with handouts, coloring pages, and a few worksheets. Help yourself to as many as you can use.

Spring: Adjective Worksheet

Directions:

Adjectives are words used to describe a noun. Write an adjective on each line to describing bees.



Write A Sentence Using Each Of The Adjectives Above.

1. _____

2. _____

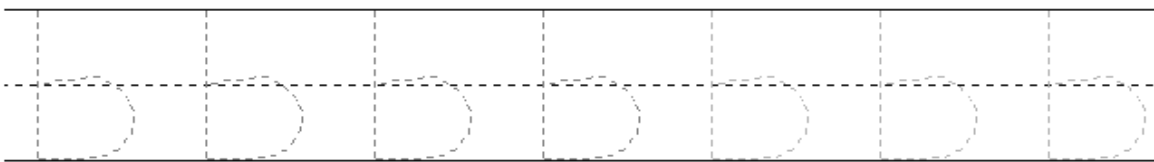
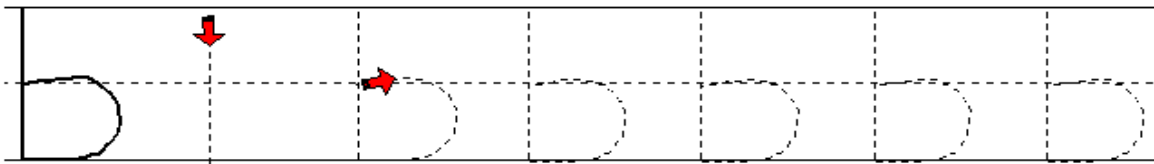
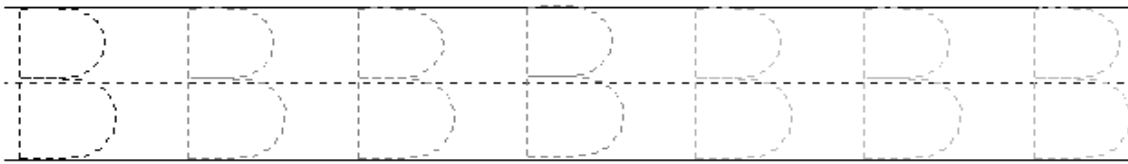
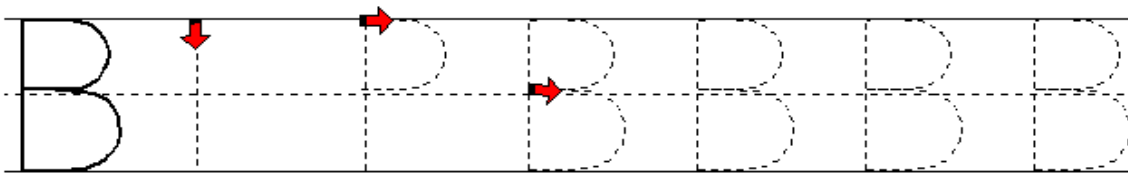
3. _____

4. _____

5. _____

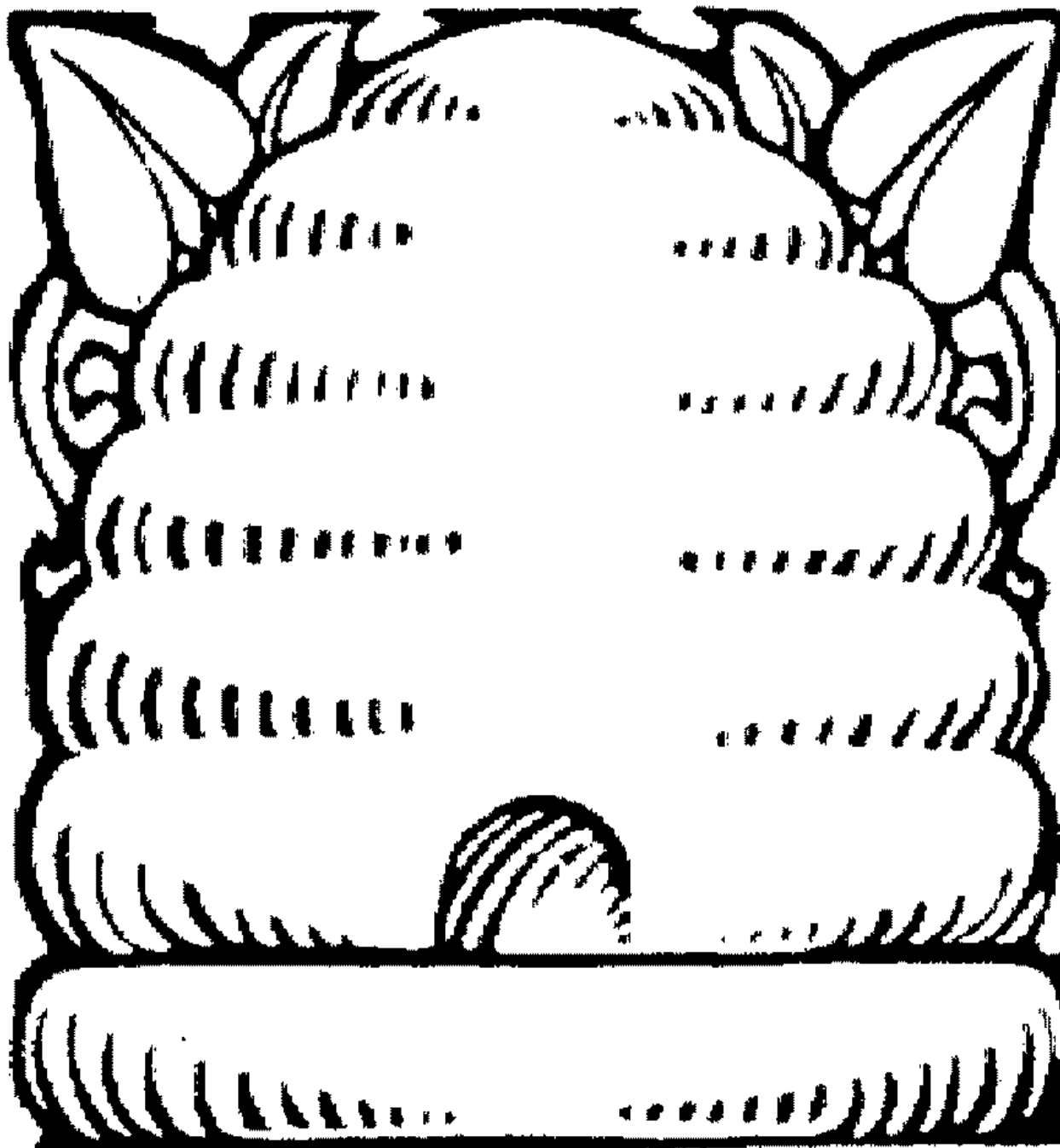
6. _____

B IS FOR
BUMBLEBEE

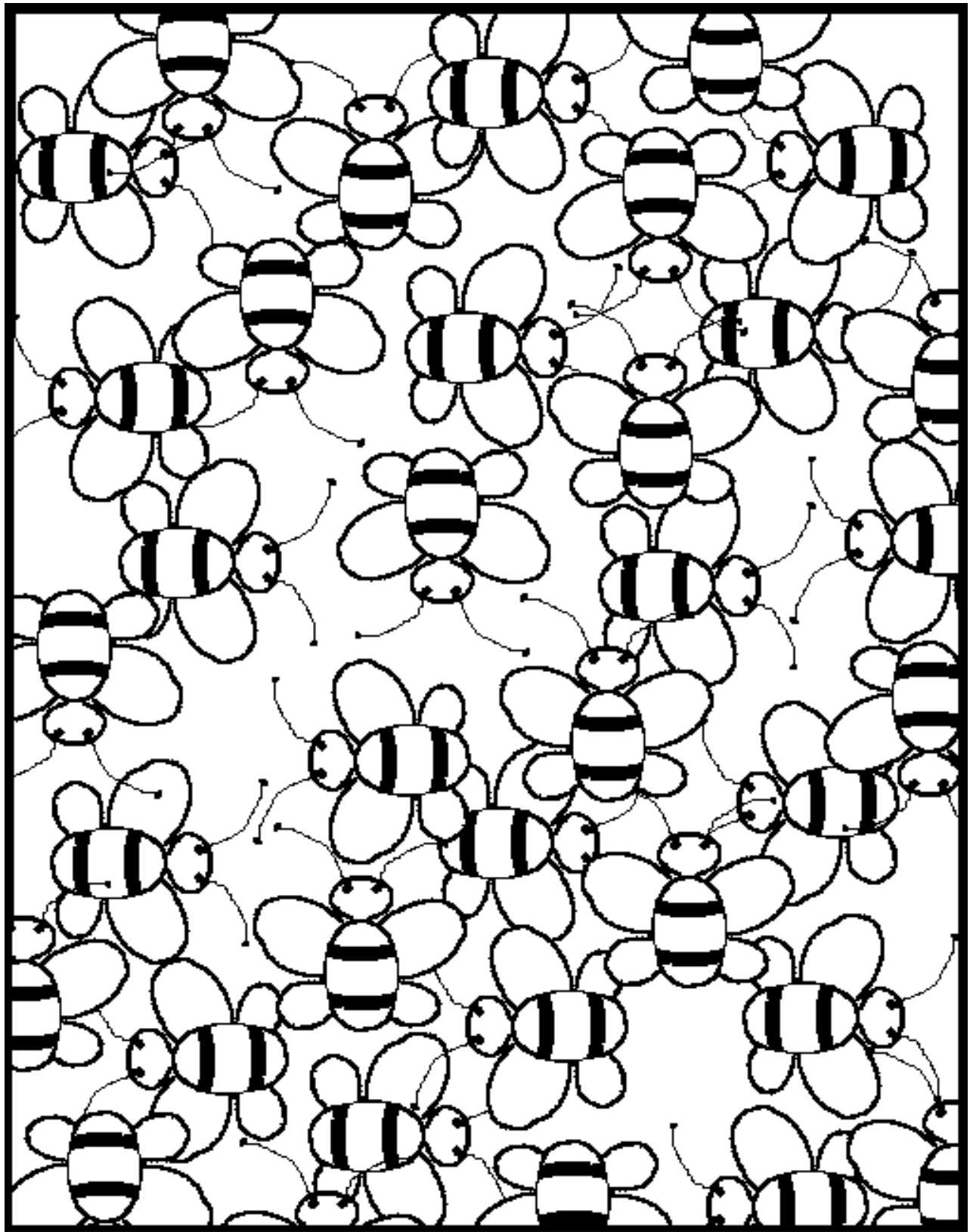




**Bb is for
Bumblebee**



A Bee hive to color—use the instructions for “Thumbprint bees” to make the bees for the hive





Bb is for
Bumblebee

The 3 types of Bees



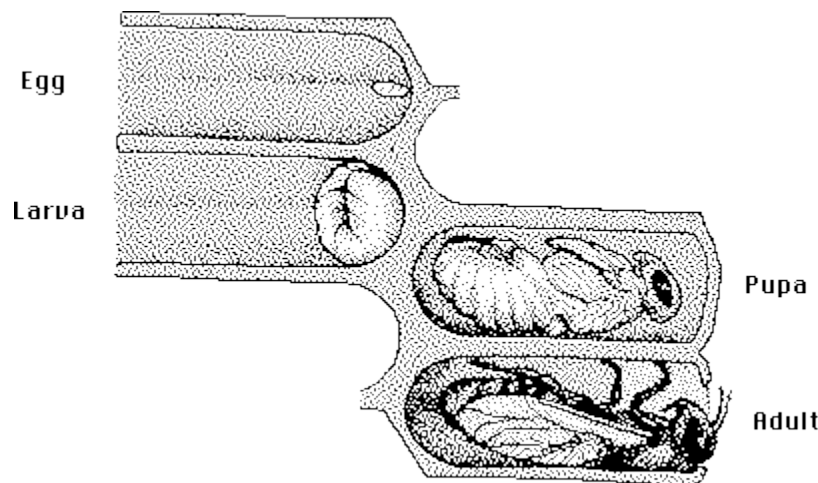
Queen Bee Worker Bee Drone Bee

Baby Bees Handout

The Pupa and the Larva

All bees develop through a complete metamorphosis:

- C. A single egg is placed in a cell
- D. after three days, the egg hatches
- E. The worm-like larva (baby bee) eats and molts (splits its skin and grows bigger) each day for about 4 days
- F. Then the larva (baby bee) goes through a “resting stage”. Its cell is capped by a worker bee. This lasts for 9-14 days. (Now the baby bee is called a Pupa.)
- G. The baby bee comes out of the cell a fully grown bee—ready to work!



Bee Stings Handout



Worker bees have a stinger which is sharp and has a barb on it (like a fishhook). The stinger is attached to a venom gland in the abdomen. Honey Bees only sting if they, or the hive, are in danger. If a Honey Bee stings a wasp, because the wasp has soft tissue, the bee can pull her stinger out and sting again. However, if she stings an animal with tougher tissue, such as a frog or a human, the barb gets caught and the stinger tears out of the abdomen, along with the poison gland. This will kill the Honey Bee.



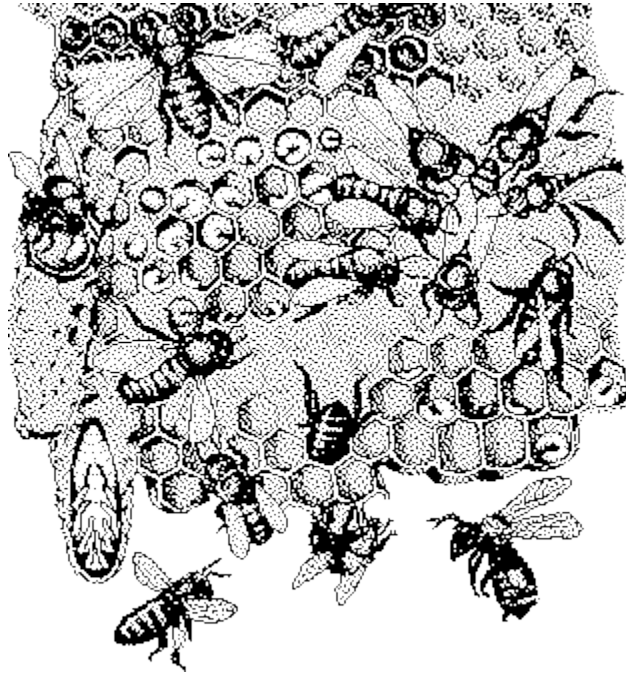
The venom is what makes the bee sting hurt. A muscle attached to the venom gland continues to pump poison into the wound,

even after the bee is gone. Bee stings, are not really dangerous unless you are allergic to bees!



Honey Bees will usually leave people alone, but they are attracted to some soaps, perfumes, and hair sprays. If one comes near you, it is probably confused. Once it realizes you have no nectar, it will leave you alone.

Hive handout



A typical small hive contains perhaps 20,000 bees and these are divided into three types:

- 6.) Queen
- 7.) Drone
- 8.) and Worker

The chart below compares these types:



Queen



Drone



Worker

Hive Handout

page 2

Chart on Honey Bees

The Queen Bee	The Drone Bee	The Worker Bee
The largest of the bees	Medium size bee	The smallest of the bees
Usually only 1 in a hive	Can be anywhere from zero to 200 in a hive	At least 20,000 to 200,000 worker bees in a hive!
Can live 2 to 3 years	Lives only 21-90 days (shorter lifespan in the Spring) Usually dies because Queen kills him after mating ☹	Lives only 20-40 days—is literally worked-to-death
Queen Bee's activities: Kills other Queens Mates with males Lays 1500 eggs/day (that is 200,000 eggs per year!!!) Secretes a chemical to make sure worker Bees never become queens	Only "job" is to mate with the Queen	<ul style="list-style-type: none">-make comb-tend larvae-tend young drones-tend queen-clean hive-gather nectar-gather pollen-evaporate nectar-cap cells-defend hive-starve drones-lay drone eggs-move larvae for making new queen

The Drone Bee

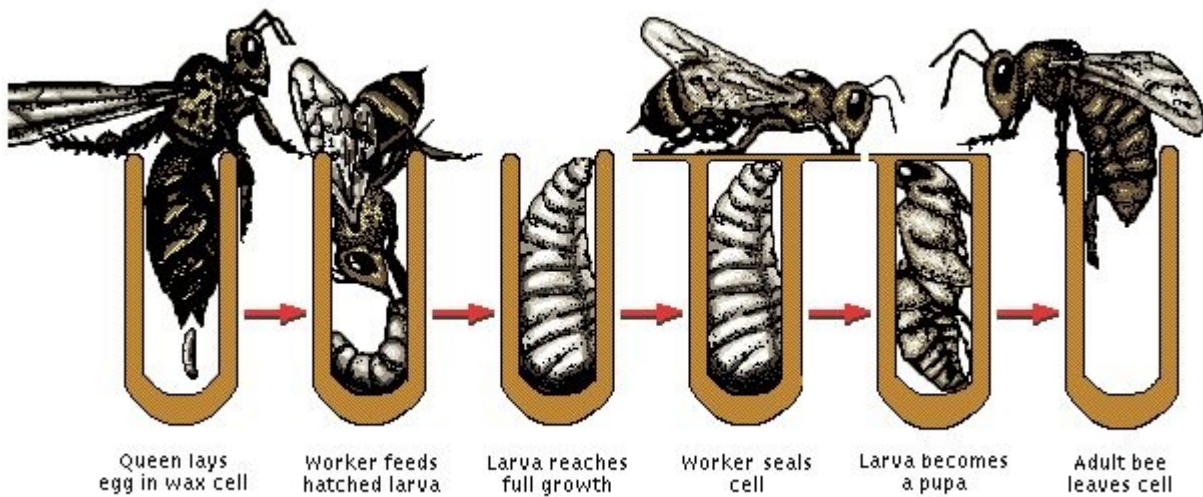


The males or drones have one purpose in life: to mate with the queen. Nature has given them extra-large eyes to ensure that they do not lose sight of the queen on the mating flight. At the appropriate time, drones meet at special mating areas far from the hive, where they attempt to mate with the queen at heights of up to 100 feet off the ground.

The drone has a reputation for being fat and lazy, this likely comes across due to his manner within the hive. The drone will not help out in brood rearing, comb building, honey curing or storage. Rather the drone does little more than eat. In fact when possible, the drone will beg [nurse bees](#) to feed them, when unsuccessful a drone will eventually help himself to stored nourishment. The drone is likely only tolerated within the colony as he is needed to spread the hive's genetics.

The Life cycle of the **Honey Bee** Worksheet

Use the illustration below to answer the questions:



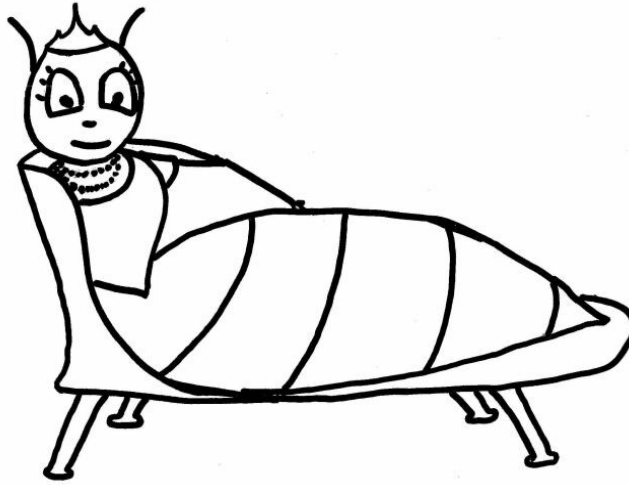
H. Number the tubes above 1, 2, 3,

I. Match the numbers with the life cycle of the Bee.

- _____ Larva reaches full growth
- _____ Larva becomes a pupa
- _____ Queen lays egg in wax cell
- _____ Adult bee leaves cell
- _____ Worker seals cell
- _____ Worker feeds hatched larva

BONUS: At which stage above do you think the Baby Bee changes (*metamorphosis*) into the Adult Bee?

The Queen Bee



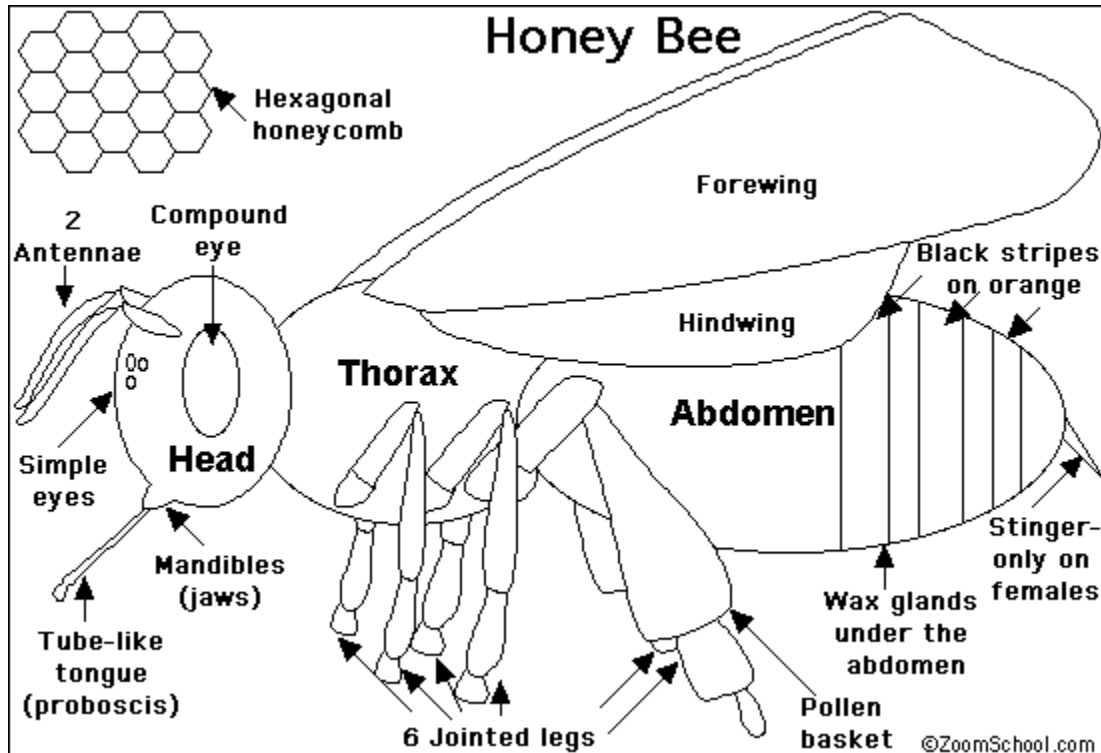
The colony is headed by the queen bee. The big female queen lays all the eggs in the colony. During the first warm days of spring she starts to lay her eggs and continues to lay them every day until the end of summer. At first she lays dozens of eggs, then hundreds and keeps increasing as the season goes on, laying as many as 1,000 to 2,000 eggs a day at the height of the season. The queen may live up to five years, she may lay up to 1,000,000 eggs in her lifetime! The queen is the mother of all the bees in the hive.

The success of a beehive depends largely on the queen bee. For some unknown reason, worker bees will select only a few of the larvae to develop into queens. The selected larvae have special cells to grow in and are fed royal jelly. A queen will emerge from her cell in only 16 days after the egg has been laid.

She will eat honey to gain strength. If there is more than one queen in the nest the queen bees may fight until death or a queen may leave or 'swarm' from the nest with other workers to establish a new colony. A newly established queen bee flies out of the hive and will mate with one or several "drones." Most likely, this one mating event will allow her to lay eggs for the rest of her life. A queen bee may lay up to 2,000 eggs a day and up to 1,000,000 in her lifetime.

The Worker Bee

Handout



How Long Does A Bee Live?

In the summer a worker bee only lives for about 40 days. As no young are raised over the winter months, the workers born in the autumn will live until the following spring. A queen can live up to 5 years however for the beekeeper a queen is passed her prime in her third year.

How Do The Bees Share Out All The Different Jobs In A Hive?

When a bee is born it's first job is to clean out the cell in which she was born. Jobs are then allocated on the basis of age.

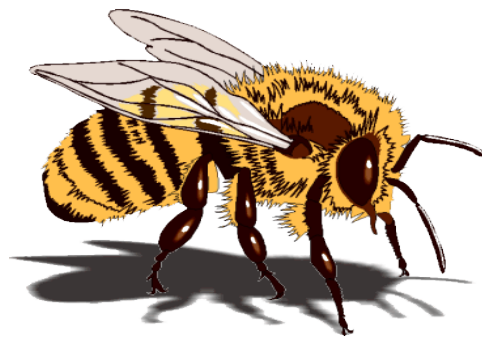
Duties of Worker Bees

1-2 days - Cleans cells and keeps the brood warm
3-5 days - Feeds older larvae
6-11 days - Feeds youngest larvae
12-17 days - Produces wax, Builds comb, Carries food, Undertaker duties
18-21 days - Guards the hive entrance
22+ days - Flying from hive begins, Pollinates plants, Collects pollen, nectar and water.

How Many Bees Are In A Beehive?

High summer about 35,000 dropping to around 5,000 in the winter.

Craft ideas



- J. [The Flight of the Bumble Bee](#)
- K. [Bumble Bee Craft](#)
- L. [How to make a BumbleBee Home](#)
- M. [Honey Bee Trivet](#)
- N. [Bee Trading Cards](#)
- O. [Favorite Honey Recipes for Children](#)
- P. [Bumble Bees and Hive](#)
- Q. [Fingerprint Bumblebees](#)
- R. http://www.first-school.ws/t/alpha3_bee_c.html
- S.

**The following are also some excellent WEB links for
“Bee” crafts.**