

# **CARE OF THE ANT HILL AND ADDITIONAL FACTS ON ANTS**

**Taken from: Uncle Milton's Ant Watchers Handbook**

## **ANTS LOVE TO EAT**

If you like to experiment, you can feed the ants other things, but remember this: if you stuff too much food into the ant hill, it will spoil and make the farm messy. This is not good for the ants.

Some things you might like to try are tiny crumbs of bread, or two or three bird seeds, or a drop of honey mixed with water.

Ants also like leaves... especially leaves from fruit trees. Take just a tiny piece of leaf, break it up and drop it into the Farm. You'll enjoy watching the ants nibbling on this. Another favorite food is meat. Drop just one dead fly or a tiny speck of hamburger into the ant hill and see what happens. Just remember: **DO NOT OVERFEED YOUR ANTS!!!**

## **THEY LIKE TO DRINK, TOO**

Here again, you should not over water your ant hill. Just a few drops of bottled drinking water every other day or two times a week. You will use the eye dropper from the kit to water the ants. Don't let the sand get soggy. You might see some droplets of water (condensation) on the inside of the windows, stop watering for a few days.

Put several drops in the top of the ant hill. Be careful not to make the sand soggy with too much moisture. There should be just enough water to make the sand slightly damp, but not soggy. Be sure to keep the sand slightly moist at all times.

## **DON'T BAKE YOUR ANTS**

When sun shines directly on an ant hill, it turns into a regular oven, and the ants die of heat. Never leave your ant hill directly in the sun, or near equipment that puts off heat. For example, computers, T.V.'s, VCR's, light bulbs, etc... The temperature in the room the hill will be in should be a constant 68° to 72° F both day and night. Do not leave it outdoors in icy weather, either. Ants can't stand extreme temperatures. When they live in the ground, they arrange their homes to suit the temperature. During very cold weather, they live in rooms deep under the ground, where the heat of the summer sun still maintains a little warmth in the soil. As the days grow warmer, they move up toward the sunlight.

## **ANTS DON'T LIKE EARTHQUAKES**

Be kind to your ants. If you shake their home or turn it upside down, you will wreck the tunnels and nests that they have worked so hard to build. Ants are very proud of their work. They take great pains building their world, and if they are disturbed too much, they will become frustrated and die. You can carry your hill around some, but don't shake it or treat it roughly.

## **ANTS ARE INDUSTRIOUS**

They are among the few types of creatures who believe in "providing for a rainy day." They work hard when the sun shines. When days become dark, they take it easy and enjoy life underground, and live off the food they have gathered.

## **ANTS HAVE LEADERS AND FOLLOWERS**

Each colony has leaders and followers. You'll notice that one or two of the ants in your hill seem to make all the decisions - where to dig, when to begin storing food, what to do next, etc... These ants are the leaders. They lead the other ants in the colony.

Sometimes one of the ants tries to go off on his own. Then the leader taps him on his head with his feelers, and the follower ant falls into line and does what he is told to do.

## **ANTS ARE DEMOCRATIC**

We can learn some wonderful lessons in Democracy by watching the ants. First of all, they respect the rights of others. They are always ready to help each other, and sometimes you'll actually see a sick ant being nursed by a few healthy ones. They share their food with each other and get along very well in their colony.

Every ant has a definite part in the work of the colony. Each ant can take as much as he needs from the community stores. When there is trouble in the colony, all the ants help each other.

Each ant has a special job, and each must contribute his share to the colony. There are, for example, worker ants that dig tunnels and make the ant hills. You can recognize them because they are always hurrying along with big loads, moving sand to make tunnels and build rooms. Hauling their loads above-ground to make ant hills is their job. Ants are very strong for their tiny size, and some workers can carry loads that weigh hundreds of times than they do.

There are feeder ants that store and prepare food for the rest of the colony. Their job is to find where the best food is, bring it home, and pile it in the storerooms that the workers have prepared.

Did you know some ants get their food from trees where bees have stored honey? The honey oozed around the tree trunk, and the ants climb the trunk, gather the honey, and carry it home to their storerooms.

Since they have no containers for honey, some types of ants have special workers whose only job is to turn themselves into "casks" for honey. They gather up the honey that is brought to them by other workers and swallow it. The honey stays in their stomachs, and they get fatter and fatter. Pretty soon they're so fat, they can hardly move! They spend their lives hanging by their feet from the ceiling of the special storerooms, and whenever the other ants get hungry they go to the honey ants and the honey ants give them a little honey.

## **ANTS ARE FARMERS**

In some types of ant colonies, there are farmer ants. They actually plant farms! They gather tiny seeds from the fields, bring them home, and plant them underground. Pretty soon the seeds sprout. Then the farmers bite off the green sprouts, carry the seeds out into the sun to dry, and the seeds turn into sugar... and everybody knows how ants love sugar!

Other ants raise and till fields above ground. They plant small plants, and keep them neat and well-tended. When the plants turn to seeds, the farmers carefully harvest the seeds and store them in the underground storerooms.

There are even varieties of ants that keep cows! The "cows" they keep are really aphids - tiny insects that live on the juices of plants. Inside the aphid, these juices turn to a sweet liquid, just as the grass our cows eat turn into milk. The aphid "milk" is called "honey-dew". When an aphid is full of honey-dew, the milker ants stroke the aphid, and he drops his honey-dew for the milkers to gather up. They then hustle it back to their storerooms.

Another type of farmer ant raises mushrooms. They plant tiny bits of mushroom in their deepest, dampest caves. The bits of mushrooms grow just so big, then the farmers snip them off so they won't get too big. The ants are always very good farmers. They weed their mushroom beds, just as they weed their seed farms, to prevent growth of other sorts of plants among their crops.

## **ANTS ARE VERY SANITARY**

Ants are very sanitary creatures. They will not tolerate litter. They always have a room somewhere that they use as a “city dump”. All the trash from the nest is carefully gathered up and hauled away to this dump.

When an ant gets sick, the other ants haul the sick one off to a special “hospital”, where it won’t be near healthy ants!

When an ant dies, special “undertakers” haul him away to a grave yard, usually at the top of the hill and away from the rest of the ant buildings. Then as they excavate their tunnels, they will pile the soil from the excavation on top of him until he is buried!

## **LONG LIVE THE QUEEN**

There is a mistaken idea that an ant colony has only one Queen. This is not true. There are often two or three Queens to a colony, and in a very large colony, there may be as many as a dozen.

In the mating season, the young Queens and male ants crawl out into the sun. Both have wings, and they fly high into the air and mate. They then fly back to earth. The males have now finished their job, and they die. The Queens, however, have scarcely started their life’s work.

The young Queen rests for a while, then she sheds her wings and crawls around until she finds a good place to begin her colony. She digs a tunnel in the ground with a small room at the end, and there she lays her eggs. For the rest of her life, the Queen will do nothing but lay eggs. The worker ants will care for her, feeding her and keeping her clean.

Some of the eggs the Queen lays will hatch other Queens. Some will hatch male ants. The largest portion of them will hatch out as worker ants. Indeed, for the first few years of her life, the Queen will hatch only workers.

An ant Queen may live as long as fifteen years. When she begins to grow old, the worker ants will move a few new Queens into the nest to keep the colony going. When the old Queen finally dies, the workers haul her off to the grave yard and bury her.

## **WHY AN ANT HILL?**

An ant hill is much more than a toy. It provides a lesson in nature study and is a splendid example of community cooperation. As you study your ants, you’ll become acquainted with the different members of the colony. You’ll discover which ones are leaders and which prefer to follow the leaders.

Watch them... a magnifying glass will greatly help... and you’ll soon realize why you should take good care of your ant hill. For these little fellows work very hard, are very loyal to the other ants in the colony, and try to be good citizens of their little world!!

## **ADDITIONAL REMINDER**

Keep your ant hill away from extremes in temperature and direct sunlight. Don’t cause “sand quakes” by moving the hill about. Quick, sudden movements will collapse the tunnels and kill the ants.

Reading Material... Your library has a host of books on ants by many famous writers. Also, various encyclopedias have given a great deal of space to the life of the ant.

## HOW ANTS AID MAN

Ants are known to aid man in many different ways. Primarily, they help balance nature. They eat large numbers of insects and keep them from becoming too numerous. For example, in the tropics, ants eat more than half the termites hatched annually. In turn, birds, frogs, lizards and other animals and reptiles consume ants as their primary food source.

Ants benefit farmers by killing insects that damage crops and those ants that dig underground nests help improve the soil by breaking it up, loosening it and then mixing it. This in turn helps the soil absorb water easier.

## ANTS AS AGRICULTURAL PESTS

Dairying ants protect aphids, (tiny insects that eat the sap of plant roots, leaves, and flowers), and other insects that harm crops. In the Southern United States, Fire ants build large mounds that interfere with the cutting of hay causing serious problems for farmers that need to harvest hay for livestock. Some ants also have painful stings that cause some people allergic reactions.

## ANTS AS HOUSEHOLD PESTS

Carpenter ants damage houses by tunneling through wood. Pharaoh's ants and thief ants invade restaurants, houses, hospitals and other buildings and eat stored food supplies. Some ants also ruin gardens by stripping bushes, plants and trees.

Poison sprays and baits can often aid ridding ants from homes and other buildings but it is recommended that a person check with the state or county agricultural extension office to make sure they are both safe and effective before using.

## ANT CASTES

In almost all ant colonies, the members are divided into three castes (classes). The castes are the queen, males, and workers.

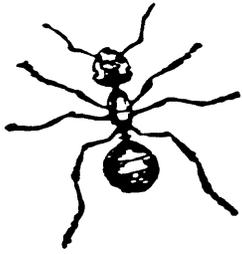


### Queens

These are fertile female ants that are capable of reproduction. They are slightly larger than the other castes (males and females), and they start their adult lives with wings. Some colonies have only one queen which lays all the eggs however, larger colonies may have three or more queens. Queen ants can live to the age of fifteen years.

### Males

Males are produced for the sole purpose of mating with and fertilizing the queens. Once they mate, they die shortly afterwards. They also have wings like the queens.



## Workers

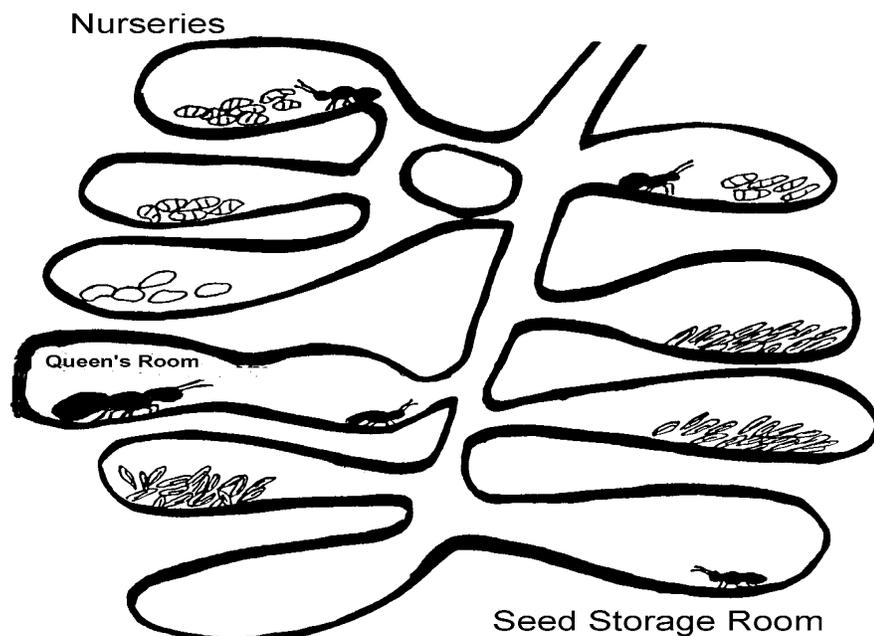
In many of the ant species, the worker class is further subdivided into sub-castes. These include workers of different sizes that act as nurses, food gatherers, construction workers and often the larger, stronger jawed ant known as the soldier, which defends the colony. Worker ants are wingless and are usually sterile females. They make up the majority of the colony and they can live from one to seven years, however, most workers probably survive less than a year.

## ANT NESTS

Ants build many types of nests. Most make their homes underground by digging tunnels and chambers in the soil and they may often cover their nests by building large mounds of soil, twigs and pine needles. Other ants, such as carpenter ants, make their nests in the branches and trunks of trees or even in the wooden beams of buildings and homes. While still other ants, construct their nests from leaves which are webbed together with silk spun larvae.

These nests vary greatly in size and dimension. "Some ants live in nests that may have only one chamber no bigger than your finger. Such a nest may have as few as 12 ants or as many as 300. Some tropical ants build huge underground nests that may extend 40 feet (12 meters) below the surface of the ground. More than 10 million ants may live in such a nest. Some North American and European ants build nests that consist of 12 or more mounds connected by underground tunnels. The nesting site may cover an area the size of a tennis court, and some mounds may be 3 feet (0.9 meters) high or higher. Millions of ants may live in the mounds and underground chambers."

Most nests contain a number of chambers. The queen has one chamber to herself where she lays her eggs. Other chambers serve as nurseries, where workers care for the eggs and growing young. Other chambers serve as resting and gathering places for workers while others serve as food storage rooms. As a colony grows, workers enlarge the nest by building more chambers and tunnels. In the winter ants hibernate in the chambers deepest within the nest.



# ANT TERMINOLOGY

**abdomen** - the rear section of an ant's body which holds the crop. The true stomach, reproductive organs and sometimes a stinger.

**antenna** - (plural = antennae) - the feelers on an ant's head that allows the ant to detect odors, flavors, and sounds. It also allows for the ant's sense of touch.

**brood** - the growing young (eggs, larvae, pupae)

**caste** - special group of ants (queens, workers, males)

**chambers** - rooms in the nest created for resting, eating, storing food, and caring for the queen and her brood

**colony** - an organized group of ants living together and sharing work duties.

**compound eyes** - eyes with 6 to 1000 tiny lenses.

**crop** - social stomach of an ant where food is stored to share later with nest mates

**entomologist** - scientist specializing in the study of insects

**exoskeleton** - hard outer covering of an ant

**formic acid** - a special chemical that an ant squirts at enemies to paralyze them - the rear section of an ant's abdomen. This is the large round section that holds most of the ant's digestive organs.

**harvester ants** - type that build elaborate underground nests with tunnels linking the chambers together

**honeydew** - sugary liquid that dairying ants "milk" from aphids

**insect** - a small animal with six legs and a body divided into three main parts. There are thousands of different kinds of insects. Among them are ants, bees, flies, grasshoppers, and butterflies.

**larvae** - second stage of ant development; larvae resemble little white worms

**mandibles** - the two jaws on the sides of the ant's mouth which are used for chewing, digging, carrying, and in soldiers for fighting.

**maxillae** - the two smaller jaws that the ant uses for holding food.

**nomadic ants** - type that cluster in large groups and roam from place to place searching for food (includes army and driver ants)

**paleontologist** - scientist who studies the remains of ancient forms of life

**pheromones** - chemicals that ants use to communicate with one another

**pupae** - third stage of ant development; cocoon spun by larvae become pupae

**queen** - the fertile female ant in the colony. This ant is capable of laying all the eggs in a colony.

**replete** - special worker ant who is fed massive amounts of honeydew by fellow workers; ant later dispenses honeydew by fellow workers; ant later dispenses honeydew to hungry nest mates

**reproductive ants** - the male and queen. These ants are able to mate and reproduce new ants.

**soldier** - large, strong jawed, worker ants of some species that are best suited for fighting.

**tailor ants** - type that build their nests by “sewing” leaves together, forming long, green tubular nests

**thorax** - the middle section of the ant’s body which contains six jointed legs.

**trophallaxis** - the method of sharing food common to ants and other insects

**tunnels** - hallways in nest that connect chambers

**worker** - the sterile female ant that does all the work in the colony.

## REFERENCES AND ADDITIONAL RESOURCE INFORMATION

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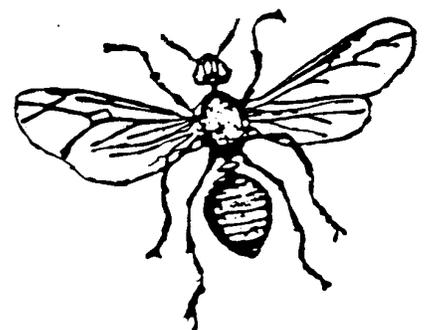
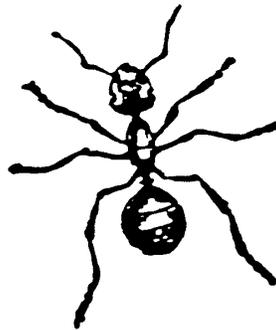
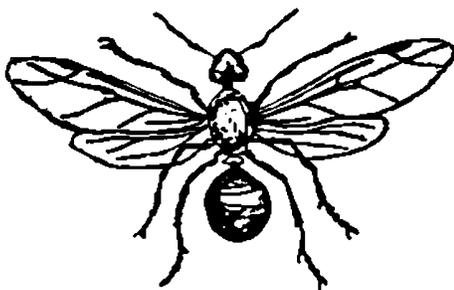
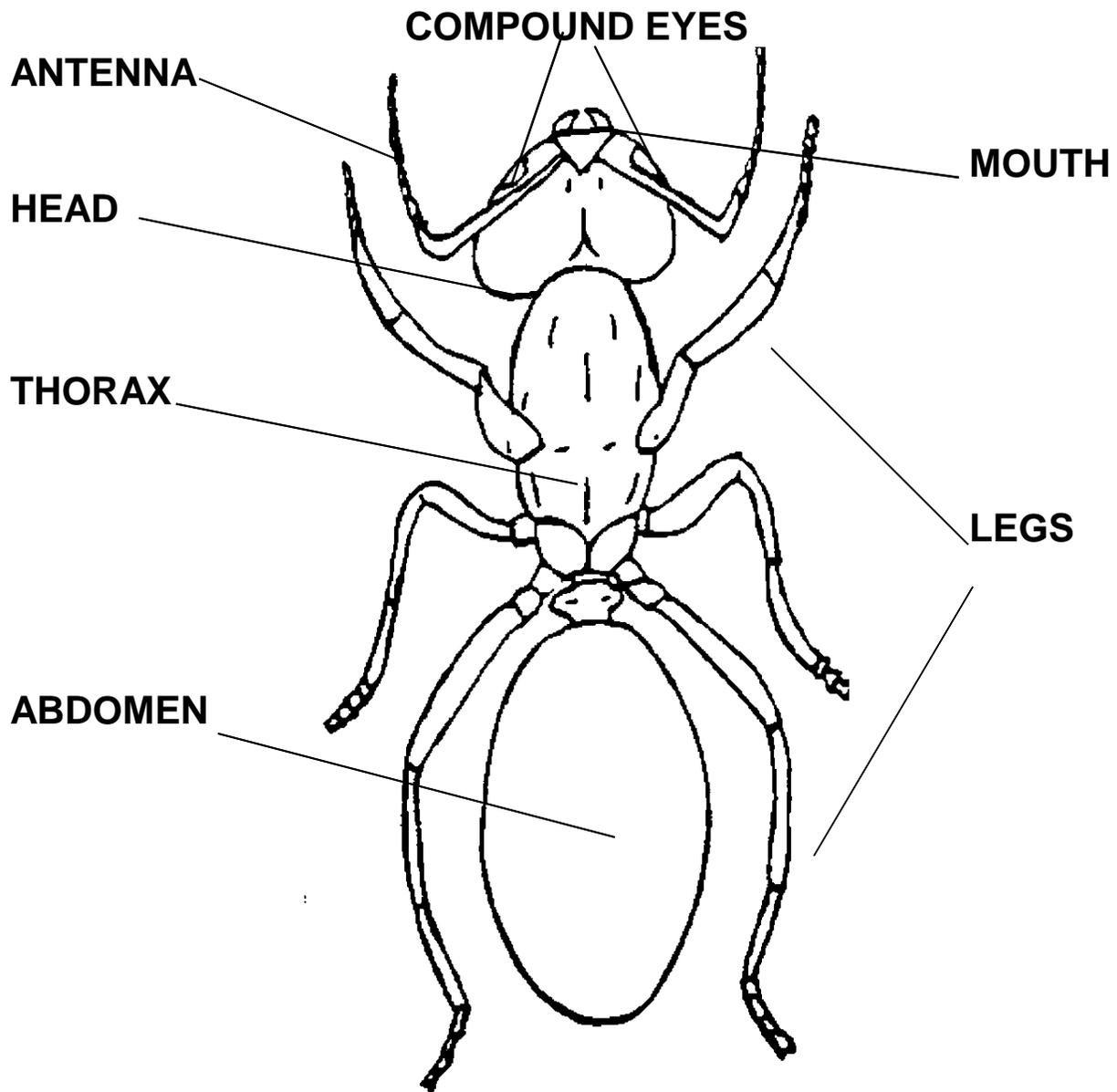
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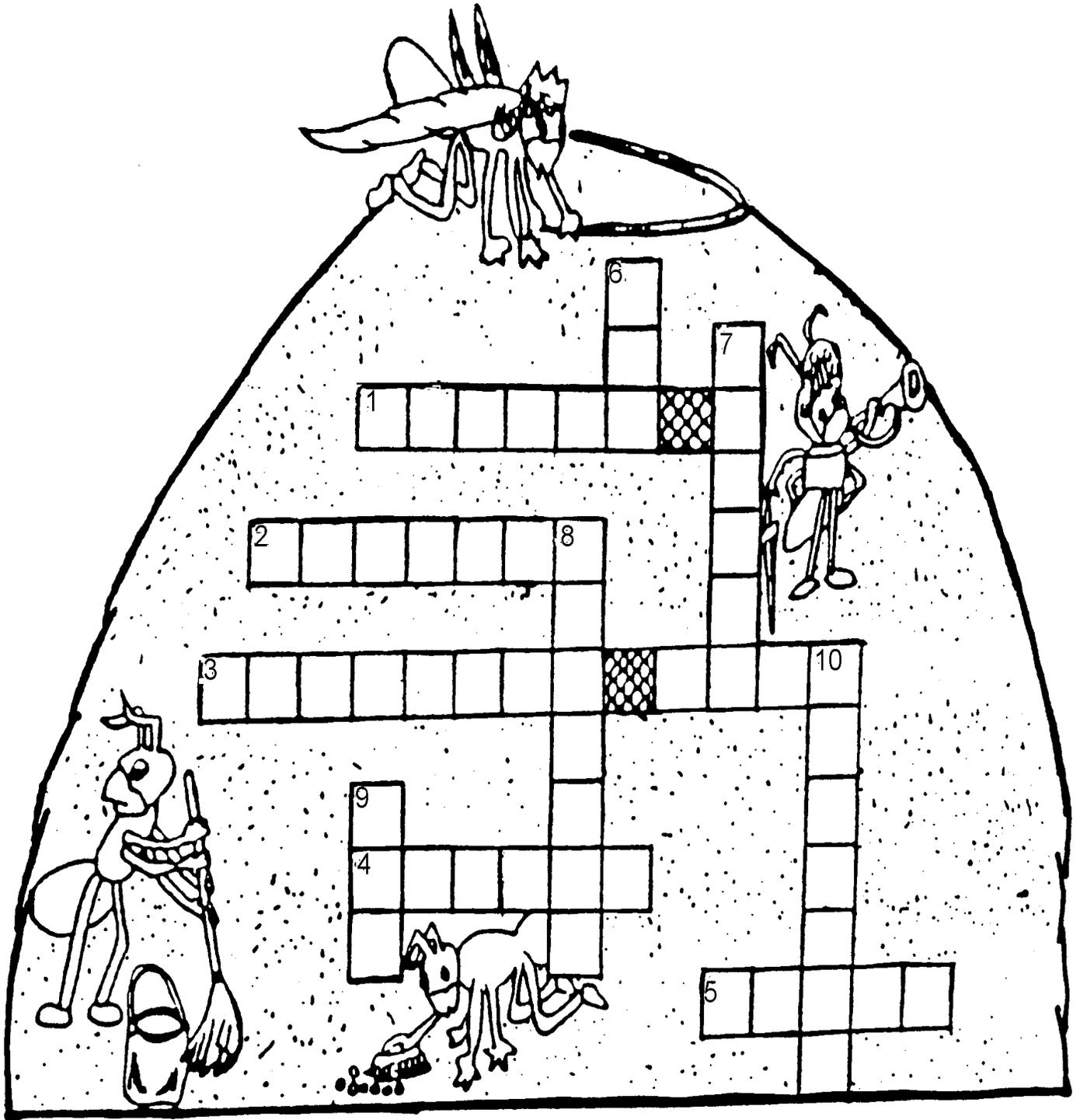
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# THE BODY OF AN ANT





# ANT HILL FUN



### **Across**

1. The middle part of the ant's body?
2. The feeler on an ant's head?
3. The kind of eyes an ant has?
4. Female ant that does all the work?
5. The female ant that lays all the eggs?

### **Down**

6. The number of legs an ant has?
7. What a group of ants is called?
8. The part of an ant body that has a stinger?
9. How many antennae does an ant have?
10. A worker ant that is strong-jawed and fights?

### **Answers**

Queen

Worker

Six

Compound eyes

Two

Soldier

Antenna

Thorax

Colony

Abdomen

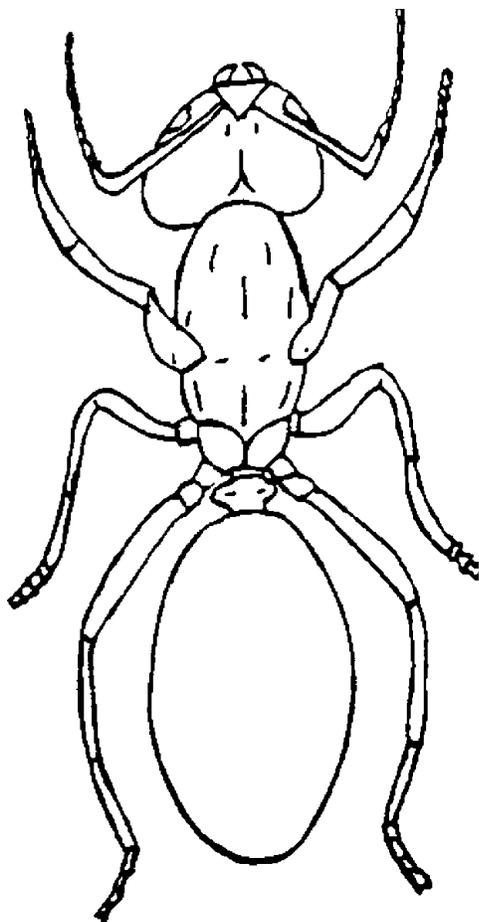


# ANT QUIZ

Instructions:

Name: \_\_\_\_\_

Identify the ant body parts by coloring them in with the colors listed by each body part (or by drawing a line from the word to the area of the body).



Head - Orange

Mouth - Black

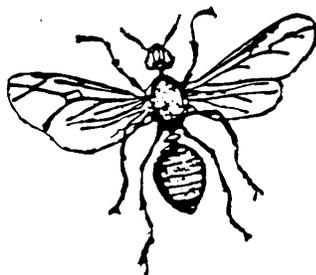
Legs - Yellow

Thorax - Blue

Abdomen - Purple

Compound Eyes – Red

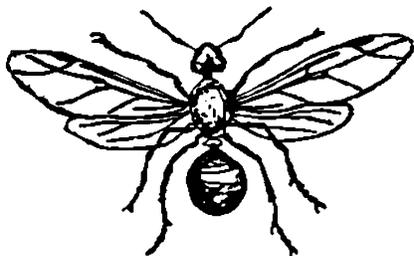
Identify the following ants by circling them with the color listed by each ant's name (or by drawing a line from the word to the correct ant).



Queen - Blue

Male – Red

Female Worker-Green





# ANT SCIENCE PROGRAM



## DAILY ANT FARM OBSERVATIONS

	Monday	Tuesday	Wednesday	Thursday	Friday
Week 1	Water Ants		Feed and Water Ants		Water Ants
Week 2	Water Ants		Feed and Water Ants		Water Ants
Week 3	Water Ants		Feed and Water Ants		Water Ants



# ANT SCIENCE

**THIS IS TO CERTIFY THAT**

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**has successfully learned**

**ANT ANATOMY**

**and can distinguish between the  
male, queen, and worker ants.**

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Teacher