

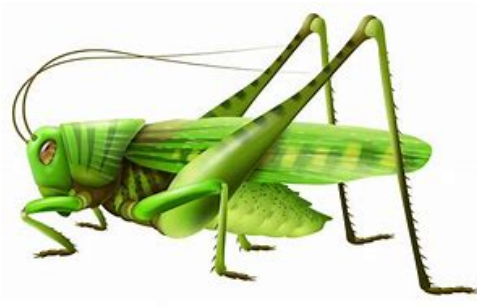


Insects

And other arthropods

Inside Outside

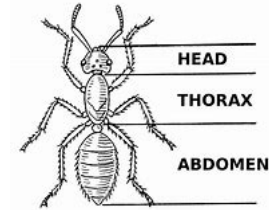
Part 2



Arthropods or Creepy Crawlies

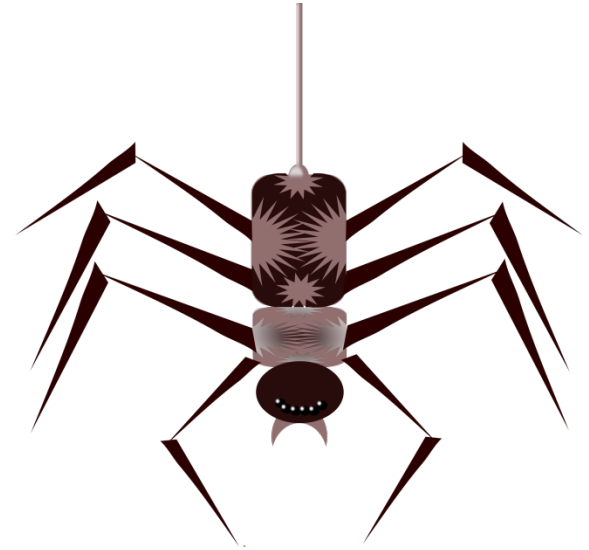
- Arthropods include insects like ants and bees, arachnids like spiders, myriapods like centipedes, and crustaceans like pill bugs.
- Tap your forehead, elbow, knee. Can you feel the hard bone under your soft skin? Those bones are part of our skeletons that give structure to our bodies. Our skeletons are inside our skin.

Arthropods have (big word alert!) exoskeletons; that means that their skeletons (hard structures) are outside their bodies like a suit of armor. Their exoskeletons are made of a cellulose like material, chitin, and minerals.







They also have bodies in segments (parts) and jointed (like our knee or shoulder) legs. There are appendages (like our legs and arms) or body parts, attached to the segments.

Arthropods

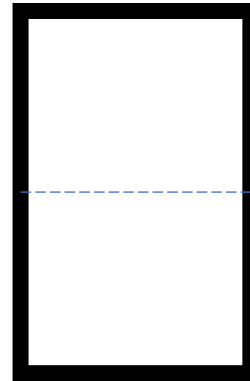
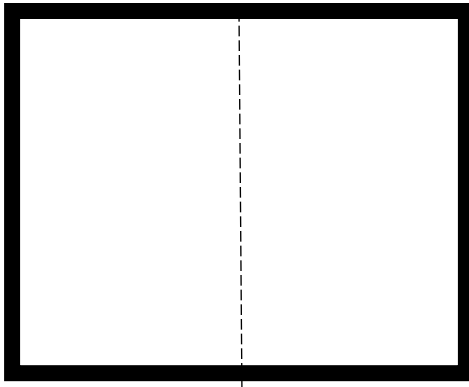


Exoskeleton=skeleton outside so they moult to grow,
no backbone,
jointed legs,
segments=body divided,
appendages=parts attached,
cuticle made from chitin.

- There are four kinds of arthropods (segmented body, exoskeleton, segmented legs)
- Arachnids—8 legs, chelicerae (used for eating), 8 eyes, pedipalps (used for bringing food to the mouth), 7 segments in legs, 2 body parts (cephalothorax =combined head and thorax, and abdomen) 
- Insects—6 legs, some wings, antennae, 6 eyes, 3 body parts (head, thorax, abdomen) 
- Crustaceans—woodlice—long segmented body and 14 segment legs—other crustaceans have claws and antennules (small antennae). 
- Myriapods—long segmented bodies and many legs. 

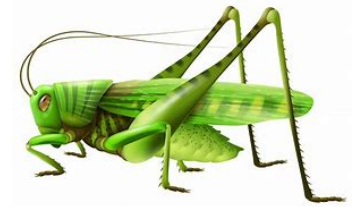
You can make a mini-book!

- Fold the paper in half
- Then in half again.



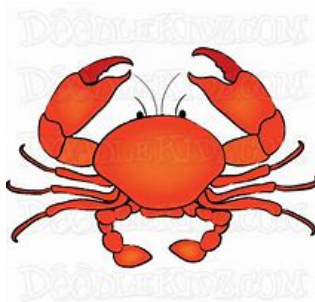


Arachnids



Insects

Crustaceans

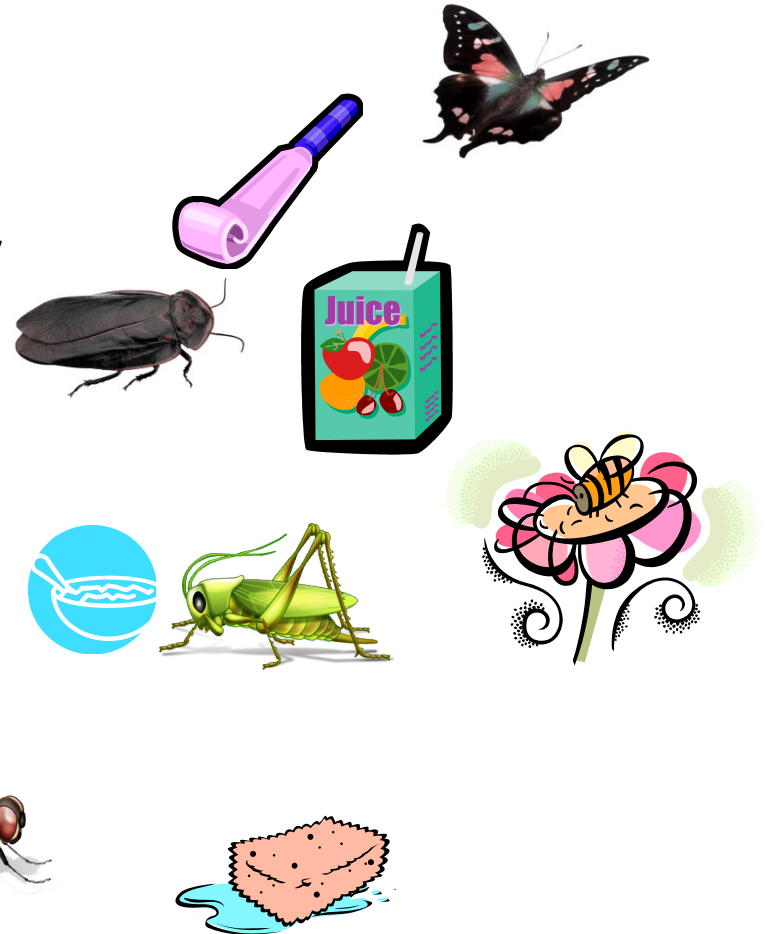


Myriapods

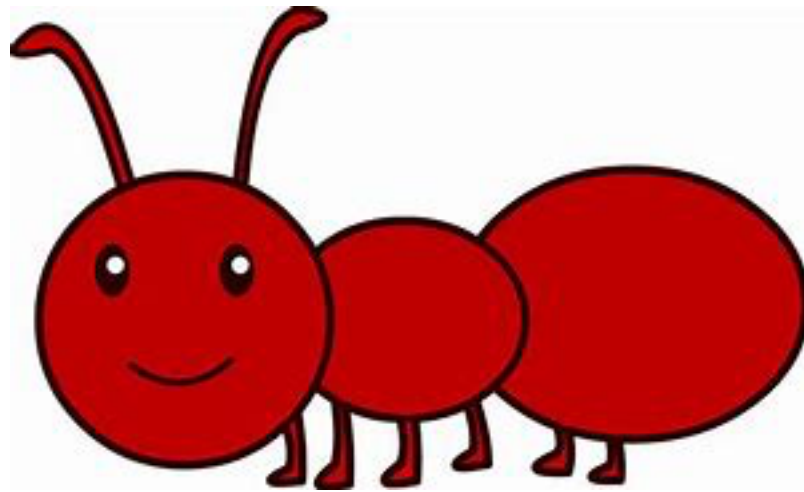


How insects eat....

- Siphon—butterflies party toy
- Pierce—bugs juice box
- Lap—bees sip nectar
- Chew—grasshoppers
- Sponge—flies sponge



Ants are insects. They have three body parts--head, thorax and abdomen—6 legs, 2 antennae.





Ants for the Let's Go Collecting Game

We can learn about ants. Ant bodies have 3 parts—let's count 1,2,3—head (touch head), thorax (tap chest), abdomen (tap tummy), and a petiole (hands on waist) or waist between the thorax and abdomen.



Six (let's count 1,2,3,4,5,6) legs are attached to the middle part, the thorax. Ants have hooks on their legs for climbing and combs for cleaning their bodies (Can you find a hook or comb in your house?).



Ants have an (big word alert!) exoskeleton Tap your forehead, elbow and knee—can you feel the hard parts, bones skeleton, under your soft skin? Feel the skin on the outside and bones on the inside. Ants' hard parts are on the outside.



Ants communicate by touching antennae (Put 2 fingers by your head and touch mommy's or daddy's two fingers.), by smell (Have something scented to sniff.), and by vibration.



Ants live in a colony or group (Interlace fingers.).

There are different jobs in an ant colony and you can find objects at home to act out the roles: nurse (rock baby), builder (hammer), food gatherer (shopping bag), food maker (cook/stir), protector (punch), queen/drone/larva/pupa (family dolls).



You can sing *The Ants Are Busy* song. Ants do a lot of work.

- Sung to: "She'll Be Coming Round The Mountain"

Oh, the ants are busy, busy as can be.

Oh, the ants are busy, busy as can be.

See them dig and dig and dig.

Lots of tunnels, oh, so big.

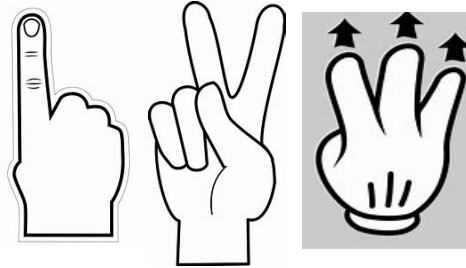
Oh, the ants are busy, busy as can be.

<http://www.preschooleducation.com/sbug.shtml>



You can do the fingerplay to remind you that ants live in a

colony or group.



Ants work together—1,2,3 (put up 1,2,3, fingers

Ants live in a colony!



(Spread fingers and bring both hands together.)

This song, to the tune of *Head, Shoulders, Knees and Toes*, teaches you the parts of an insect like an ant.

Head, thorax, abdomen, abdomen 2x
(touch head, chest, tummy)

6 legs, some wings and exoskeleton

(3 fingers each hand, flap hands on shoulders, go head to toes both hands)

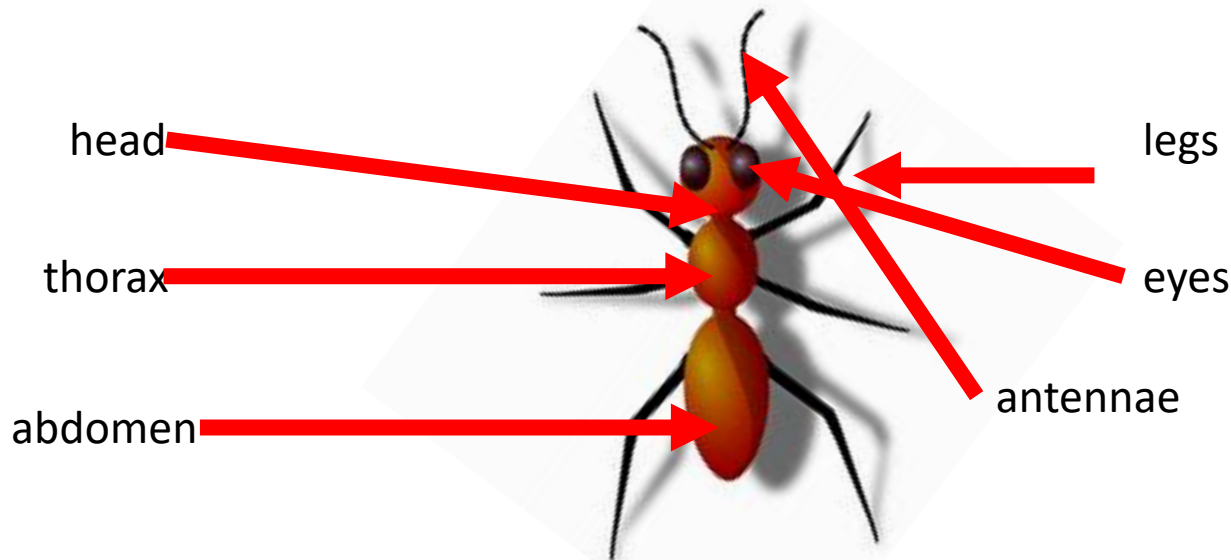
Head, thorax, abdomen, abdomen.

Head, thorax, abdomen, abdomen 2x
(touch head, chest, tummy)

Big eyes, small size and 2 antennae too

(2 fists, pointer fingers together, pointer fingers on head)

Head, thorax, abdomen, abdomen.



You can be an ant following a pheromone (smell) path and sing *The Ants Go Marching* and march!

Sung to: *When John Comes Marching Home*

The ants go marching low and high
Hurrah! Hurrah!



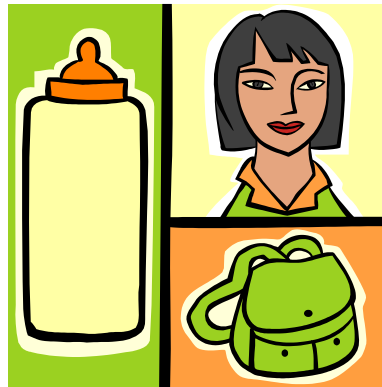
The ants go marching low and high
Hurrah! Hurrah!

The ants go marching low and high

The ants go marching by and by,

So let's all go marching down to the ground and
up to the tree. You and me!

You can act out some of the jobs ants do in the colony: males , queens, food collector, builder, guard and nurse.



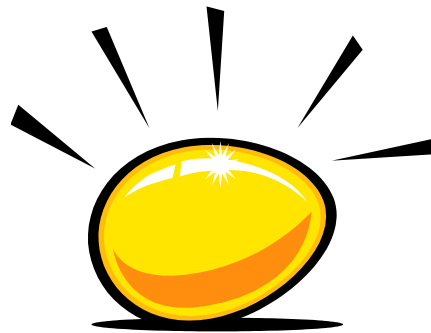
Males=daddies

- Mate=make babies



Queen=mommy

- Lays eggs



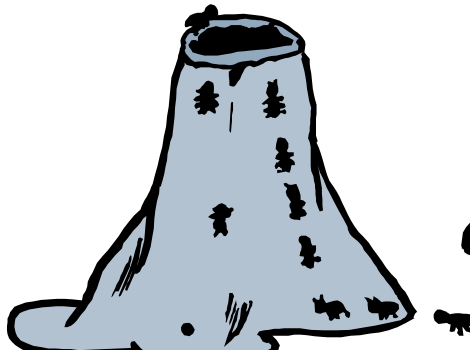
Worker

- Food collector



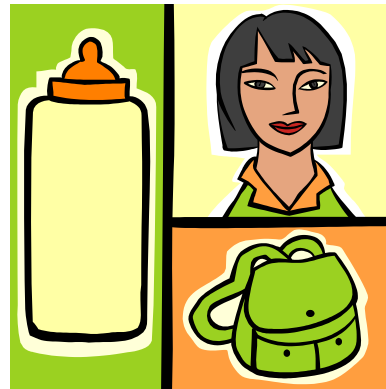
Worker

- Nest builder



Worker

- Daycare, nanny, babysitter



Worker

- Protector

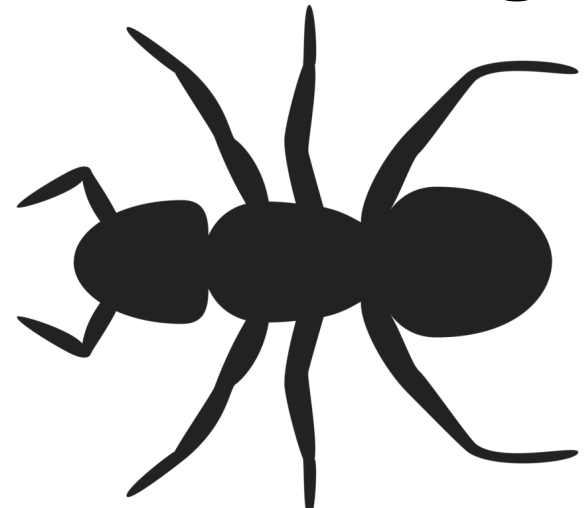


You can cut out an ant and act out the Ant Chant!



Ant Chant

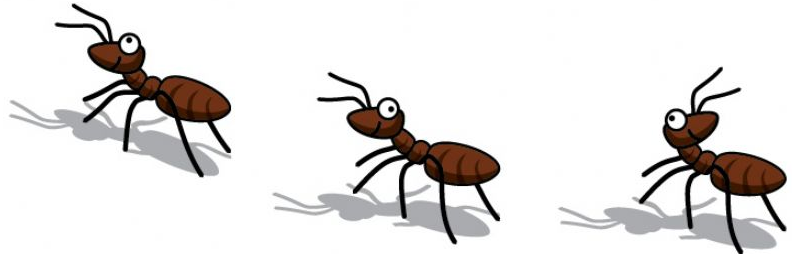
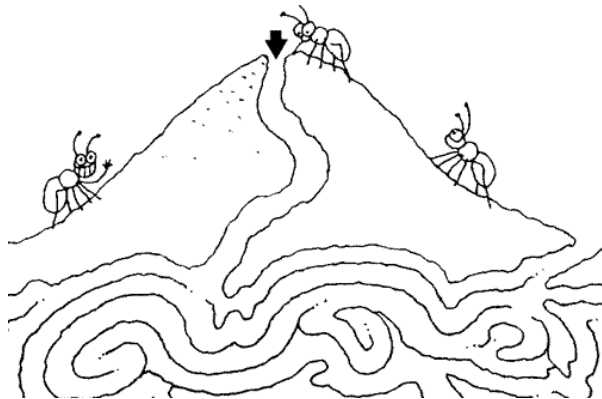
**Ants have a great big head, I say,
With two large eyes and two antennae.
Their thorax is like what we call a chest
Six legs are there, that is best
They have an abdomen; you can call it a
tummy.
They like it best filled with something
yummy.**



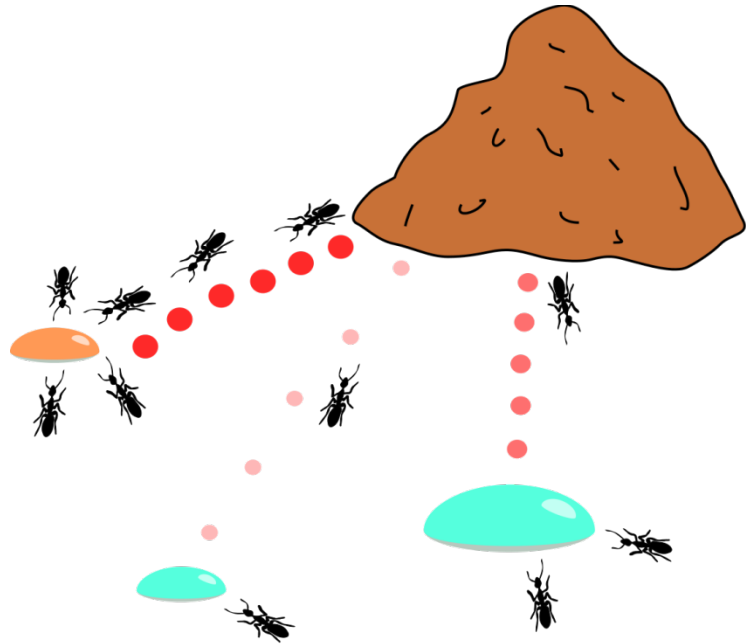
**Some ants live in a great big mound;
Some ant hills are much smaller and
round.**

**These ants are marching into the
ground.**

**Let's look inside and see what's
found.**



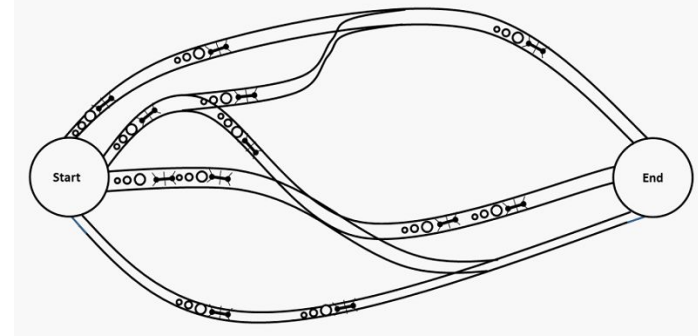
**Ants live together like a family;
They all have a job in the colony.
Some ants are workers; some ants
guard
And when they bite, they bite hard!**



We build a house with hammer and nails.

Ants build their nests by digging trails.

**We rock babies to help them sleep;
Ants keep their babies in a great big heap.**

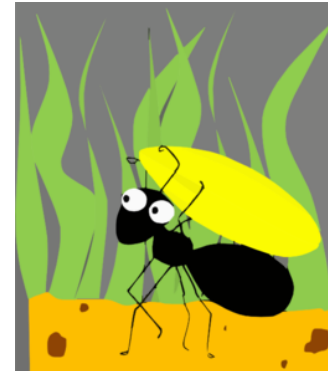
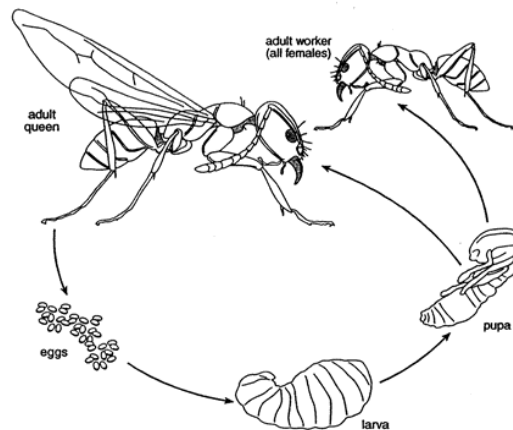


Some of the workers must find some food.

There're so many mouths in the ant nest brood.

You have a mommy, ants have a queen.

She lays more eggs than you've ever seen!



**The daddy ants also have six legs;
Their job is to help the queen make
eggs.**

**Ant babies change as they grow.
You have changed too, that is so.**



Queen



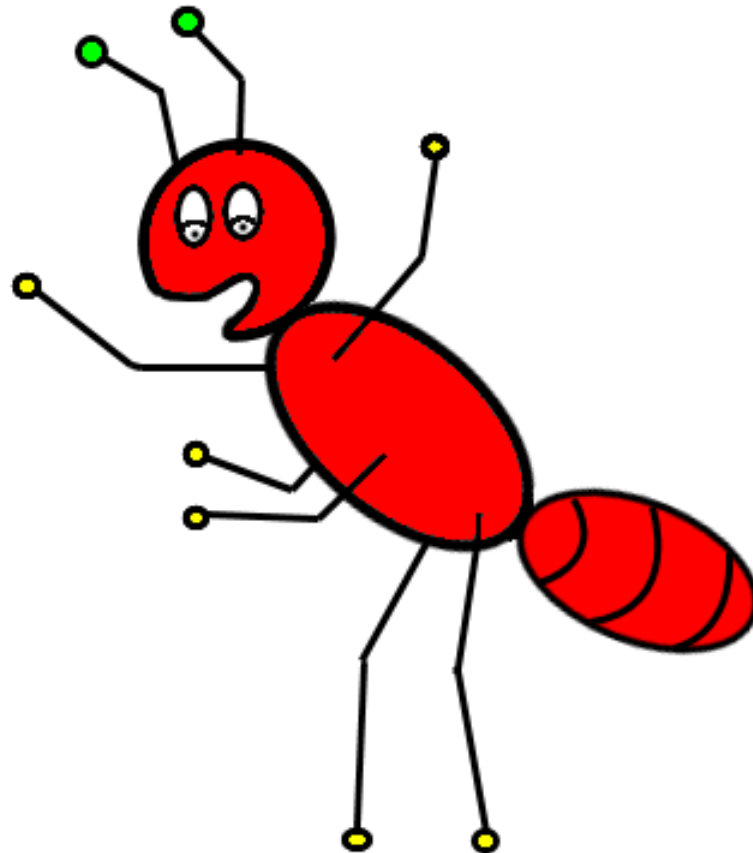
Male



Normal-sized worker

Soldier

**Now you know the story; let's
give a chant!
Let's all say, "Hey, Little Ant!"**



Here is a story you can read about a very busy ant.



Once there was a very busy ant.





He tried to find the way out of the plant.



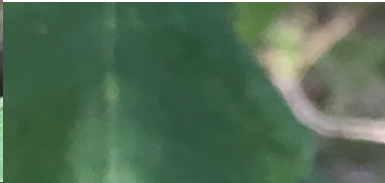


He looked all over....





and all around....



up and sideways and
upside down!

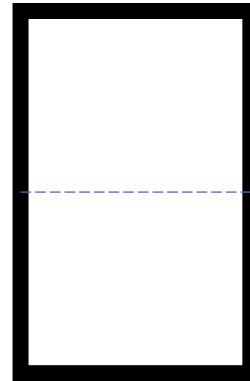
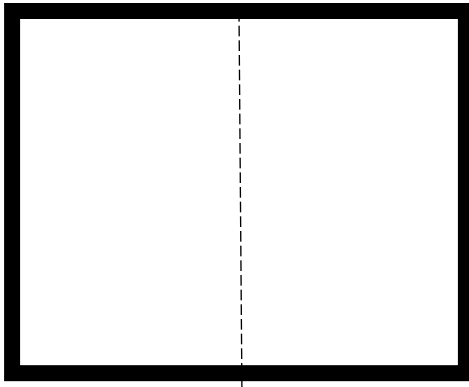
Follow a pheromone trail.

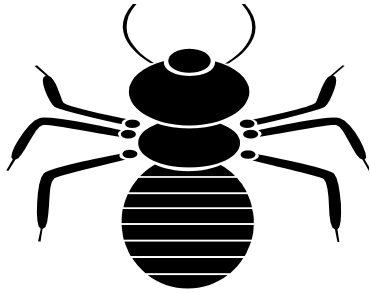
- You can make a pheromone trail with any scented spray or spice and act out being an ant following the scent (pheromone) trail.



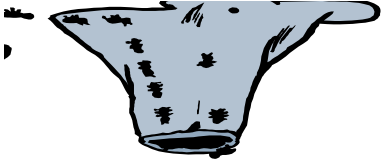
You can make a mini-book!

- Fold the paper in half
- Then in half again.





https://www.google.com/search?q=ant+hill&hl=en&qscr=1&rlz=1T4TSNF_enUS446US446&tbm=isch&to=u&source=univ&sa=X&ei=cD1DUZyTFZTVqAHw2oGVAQ&sqi=2&ved=0CE0QsAQ&biw=1366&bih=589#imgsrc=FRCNNovlrj69HdM%3A%3BM3Q5ZVNXYZ852M%3Bhttp%253A%252F%252Fwww.ant-farms.com%252Fimages%252Fant-hill.jpg%3Bhttp%253A%252F%252Fwww.ant-farms.com%252Fant-hill.htm



Let's Go Collecting Bag

- Get a bag or envelope and



- Glue on the net and decorate it for the Let's Go Collecting Game!



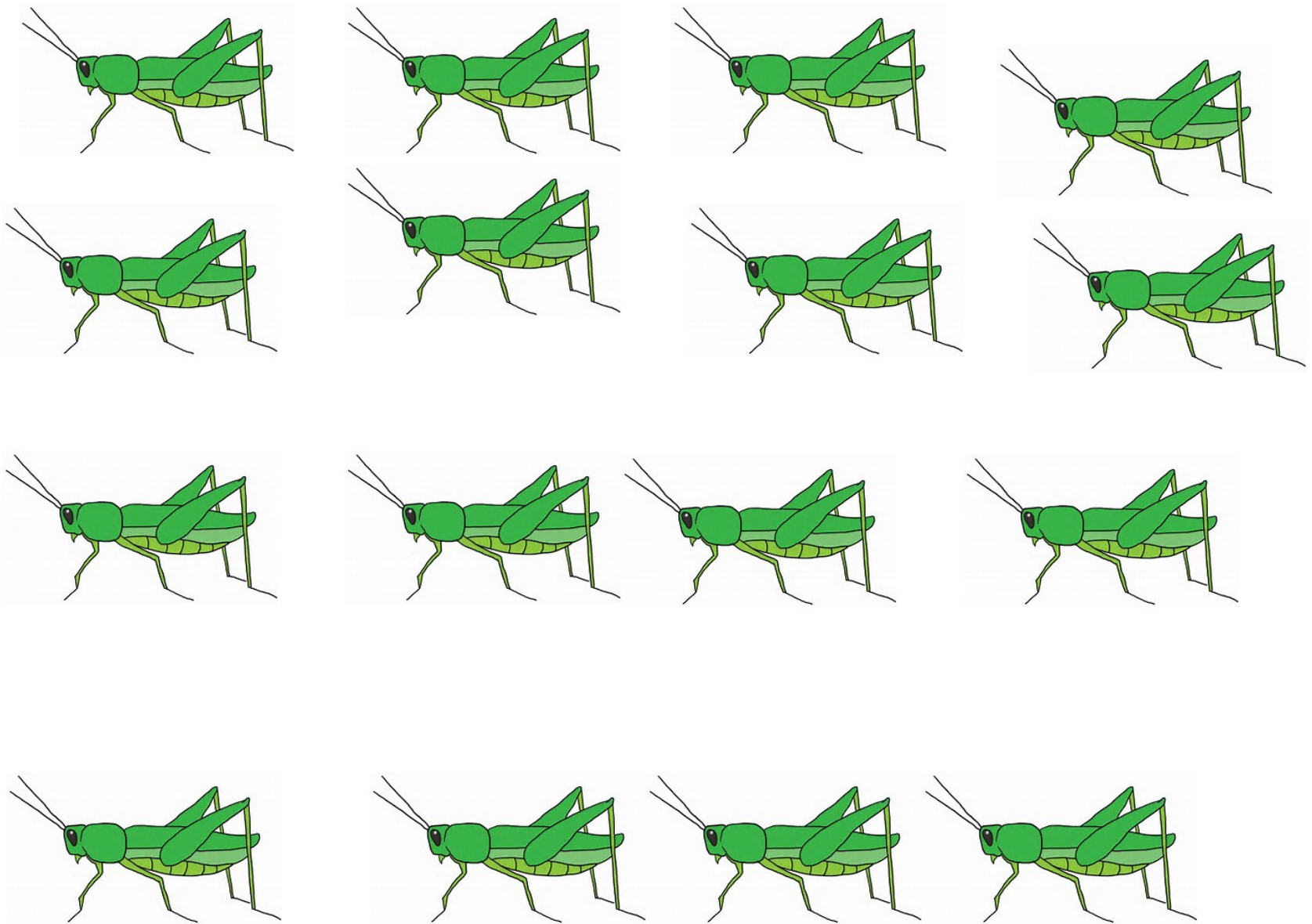
Your family can hide all the arthropods around the house, and you can play the Let's go Collecting Game and try to collect all the spiders and insects in your bag!

Grasshoppers are insects with incomplete metamorphosis; that means they go through 3 stages—egg, nymph, adult.





Grasshoppers to hide around the house for the Let's Go Collecting Game



Grasshoppers to hide around the house for the Let's Go Collecting Game

Butterflies are insects with complete metamorphosis—that is they go through 4 stages—egg, larva (caterpillar), pupa, adult



You can sing butterfly songs.

Sung to: "Twinkle, Twinkle, Little Star"

Flutter, flutter, butterfly.
Floating in the summer sky.
Floating by for all to see,
Floating by so merrily.
Flutter, flutter, butterfly,
Floating in the summer sky.



Sung to: "I'm A Little Teapot"

I'm a little butterfly
I have wings
I fly around
And see all things.
When I see a flower
That looks great
I call out
To all my mates.



Butterflies to hides around the house for the Let's Go Collecting Game

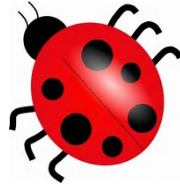




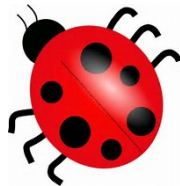
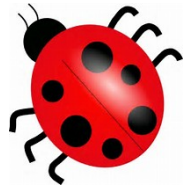
Caterpillars to hide around the house for the Let's Go Collecting Game

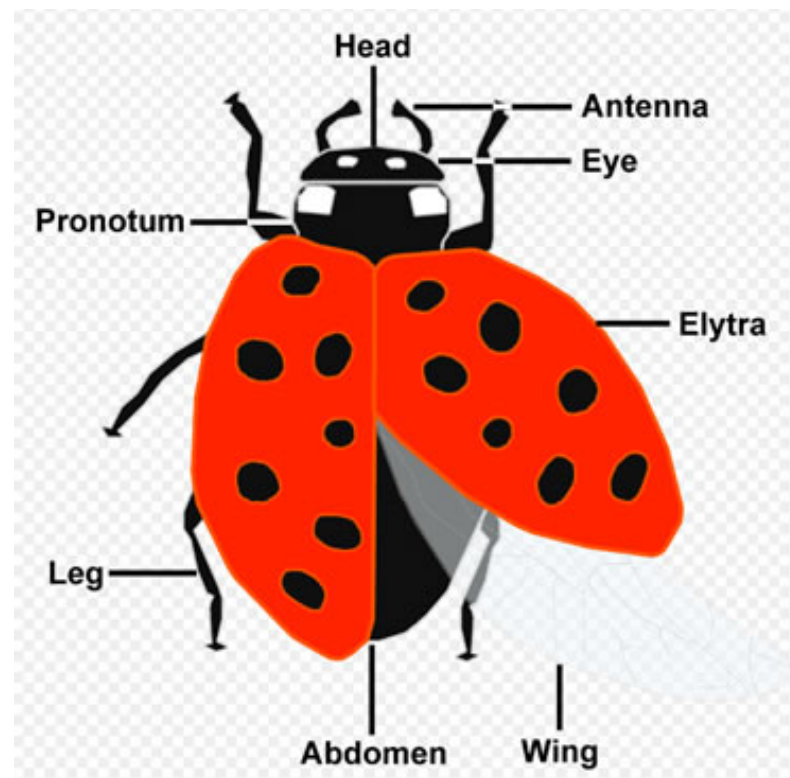
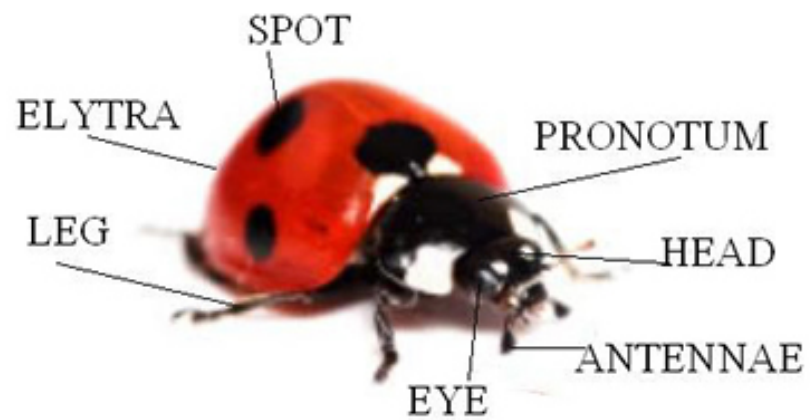
Beetles are insects with hard outer wings called elytra.





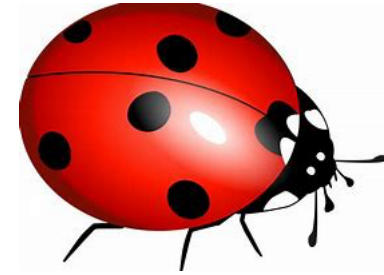
Beetles for the Let's Go Collecting Game





You can sing beetles songs.

- Ladybug, show your spots.
You have red wings and black dots.
We will count those seven dots
On your shiny shell.
Ladybug, your spots are swell!



- Fly, fly, fly
Ladybugs fly
Fly over here
Fly over there
They fly up high and they fly down low.
Around and around and around they go.
They fly fast, and they fly slow.
Oh, ladybugs fly



There are several kinds of beetles—ladybirds, ground beetles, long-nosed weevils, scarabs and fireflies. Ladybirds come in different colors.



Bees are social insects. They live in a group called a colony. At different ages worker bees have different roles. Queen bees lay the eggs. Drones help make the babies.



Honeybee, honeybee,

Landing on my nose, (touch nose)



Honeybee, honeybee,

Now she's on my toes. (touch toes)



On my arms, on my legs, (touch arm, leg, elbow)

On my own elbows.



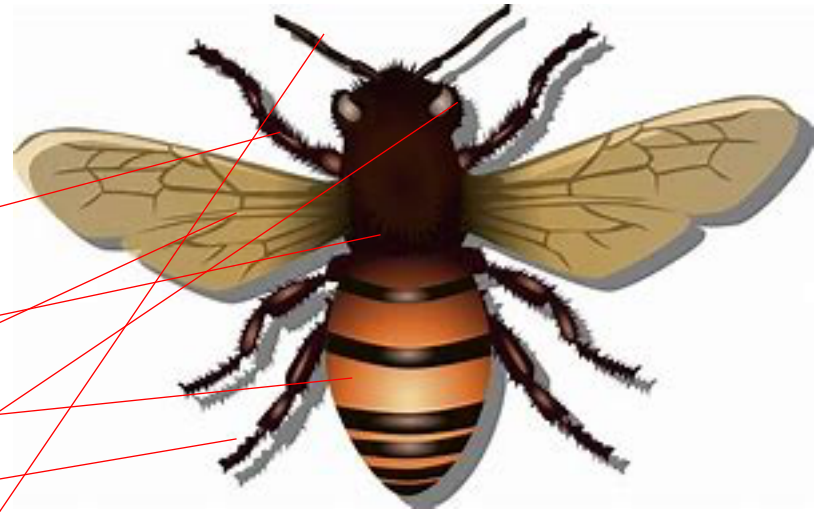
Honeybee, oh honeybee

She lands, and then she goes. (hand flies off)



(Jingle bells)

Busy as a Bee



Head, thorax, abdomen, abdomen 2x

(touch head, chest, tummy)

6 legs, some wings and exoskeleton

(3 fingers each hand, flap hands on shoulders, go head to toes both hands)

Head, thorax, abdomen, abdomen.

Head, thorax, abdomen, abdomen 2x

(touch head, chest, tummy)

Big eyes, small size and 2 antennae too

(2 fists, pointer fingers together, pointer fingers on head)

Head, thorax, abdomen, abdomen.

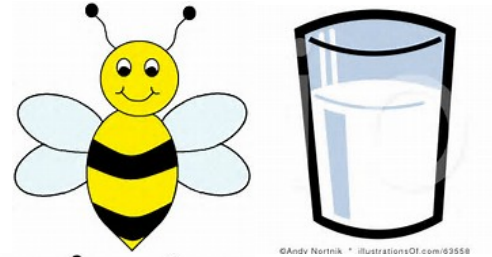
Growing Up WILD

Bees for the Let's Go Collecting Game

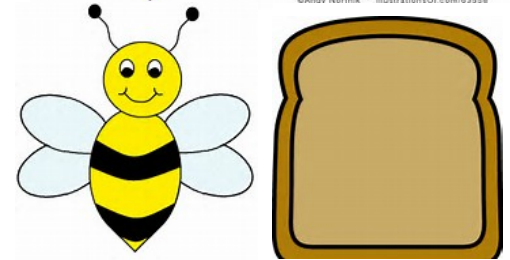


Bees have different foods

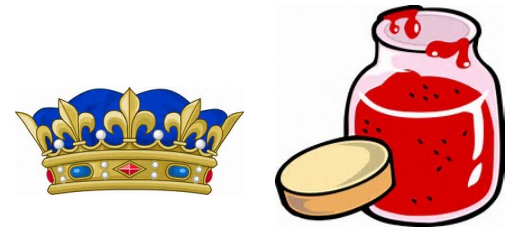
Bee milk



Bee bread



Royal jelly

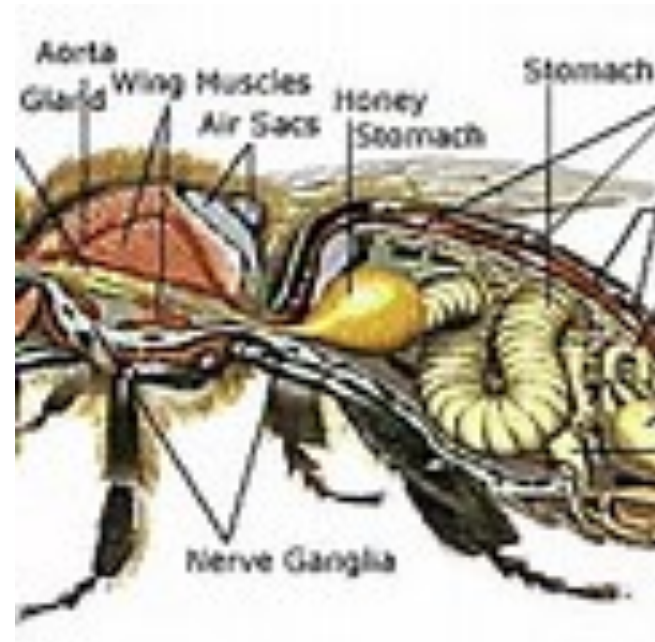


Bee Terms

honey basket



honey stomach



Honey

- Hive
- Comb
- Honey tool
- Hive smoker
- Extractor
- Bee keeping clothing



Make a bee

- Add 2 big eyes
- and 3 little eyes to head. Add 2 antennae.
- Add 6 legs and 2 pair wings to thorax.
- Color yellow and add black stripes to abdomen.



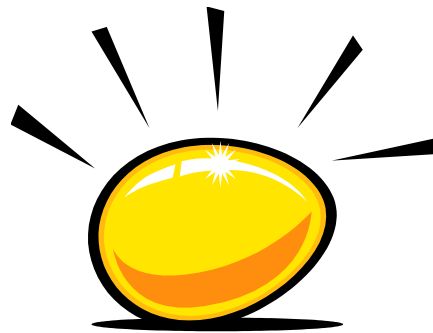
Drone=daddy

- Helps make eggs



Queen=mommy

- Lays eggs



Worker

- Food collector



Worker

- Nest builder



Worker

- Protector



Worker

- Daycare, nanny, babysitter, parent



Worker

- Janitor



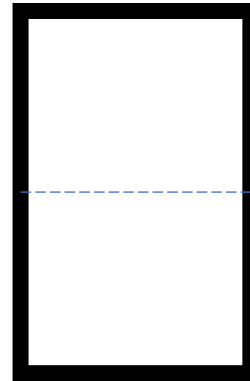
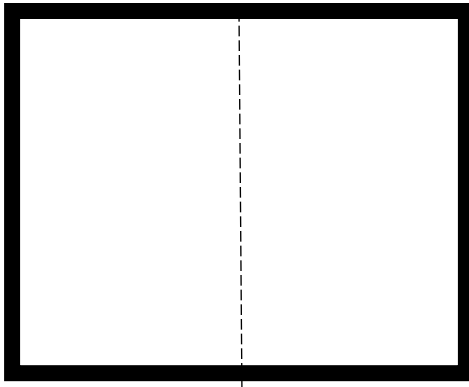
Worker

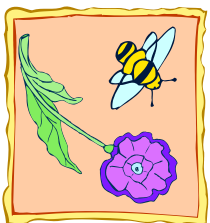
- Cook



You can make a mini-book!

- Fold the paper in half
- Then in half again.





Spiders are arachnids. They have two body parts; cephalothorax is a combined head and thorax. The legs come out of the head! Spiders have 8 legs and spinnerets to make silk for webs.



Spiders for the Let's Go Collecting Game



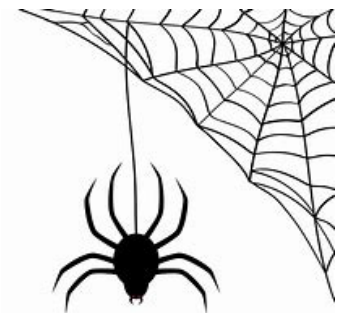
More about spiders!

Kinds of spiders

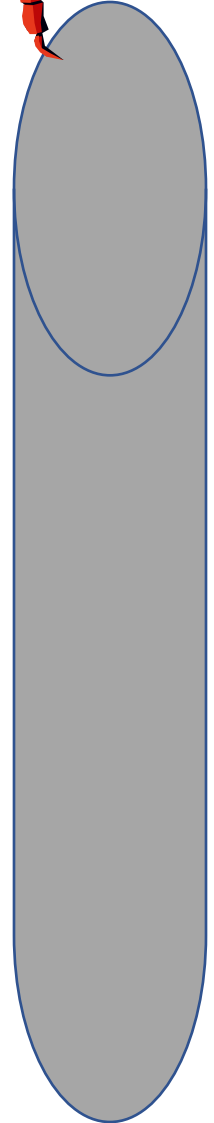
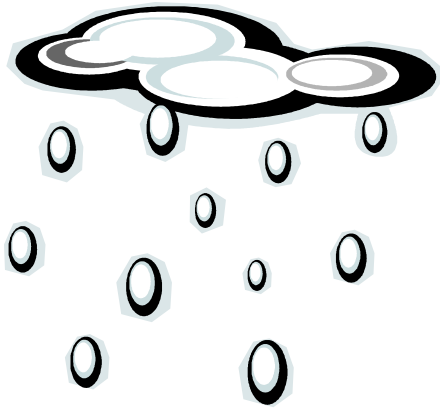
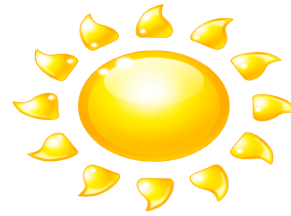
- Spiders use spitting, hunting, jumping, fishing and trapping, as well as webs to trap prey--spiders are carnivores.
- Some kinds of spiders are money spiders, orb-web spiders, trapdoor spiders, jumping spiders, crab spiders and huntsman spiders.

Webs

- Webs can be orbs or circles, hammocks, sheets, scaffolds, traps.
- Spiders can make trapdoors, or spit, to glue their prey, or make nets to catch prey in the water.



Itsy Bitsy spider--popsicle stick with sun glued on top
and cloud on the bottom and spider ring to slide up and
down



Background information for parents:

Spiders anatomy—spiders generally have 8 eyes, 2 large and 6 small.



Their 8 legs have 7 joints.

They have scopulate pads on the bottom of their feet and generally 2 claws.

The hard shell made of chitin over the cephalothorax is the carapace.

They have chelicerae jaws and pedipalps to hold and push food.

When they moult the abdomen splits.

The spinnerets make silk. The two body parts are cephalothorax and abdomen. Lyriform organs pick up vibrations.



Spider Body

to Mary Had a Little Lamb

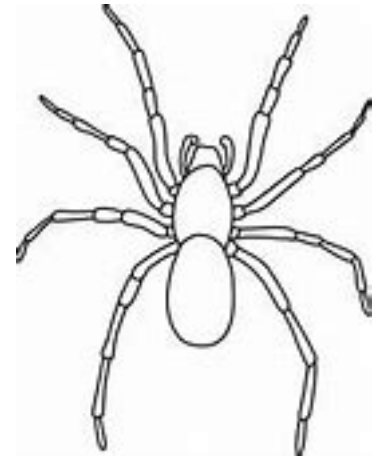
Spider bodies have 2 parts 3x

Spider bodies have 2 parts the head and abdomen.

Spider bodies have 8 legs 3x

Spider bodies have 8 legs and spinnerets for silk.

Growing Up WILD



Spider Songs

The Spider in the Web

Sung to: "Farmer in the Dell"

The spider in the web,
The spider in the web
Spin, spin, oh watch him spin,
The spider in the web.

The spider eats a (bug name)
The spider eats a _____.
Spin, spin, oh watch him spin,
The spider in the web.

- <http://ccplonline.org/kids/songs4tots/spiderinweb.html>



Little Spider sing to *Mary Had a Little Lamb*

Spider bodies (have 2 parts 3x)

Spider bodies have 2 parts the head and abdomen.

Spider bodies (have 8 legs 3x)

Spider bodies have 8 legs and spinnerets for silk.



Make your own spider webs!

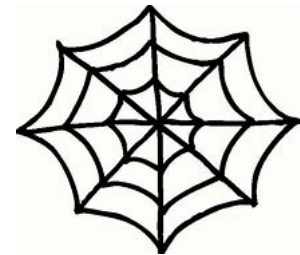
Giant spider web

- Use a skein of yarn or roll of ribbon or spool of thread and weave a web between a group of chairs.



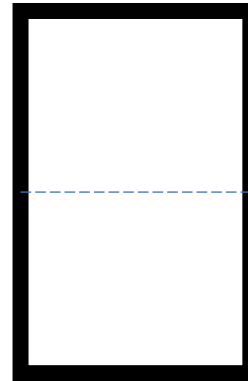
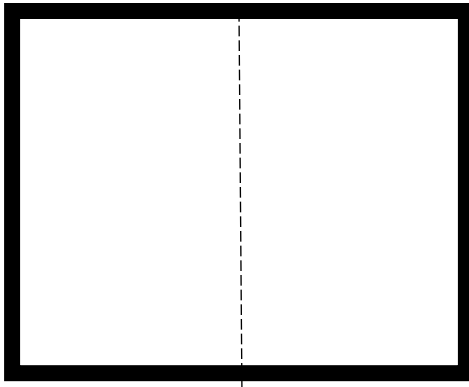
Spider web snack

- You can make your web from a squeeze bottle of dressing or ice cream topping and place raisins or nuts or seeds to be the flies caught in the web.



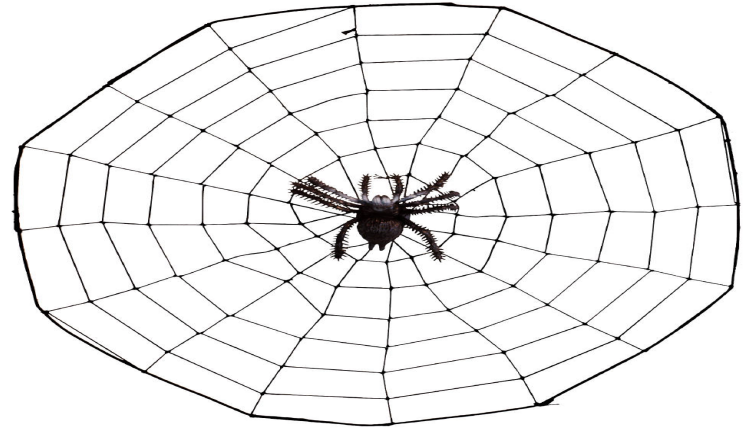
You can make a mini-book!

- Fold the paper in half
- Then in half again.

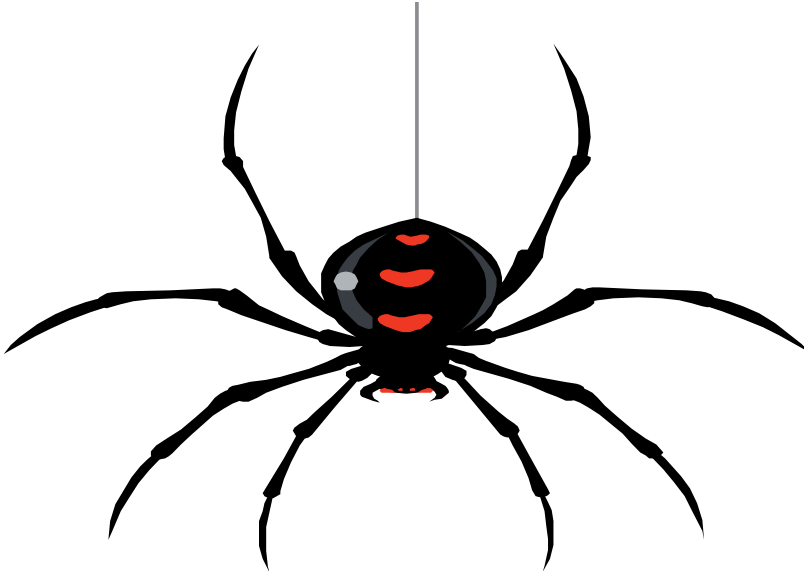




Catch insects



Weave webs



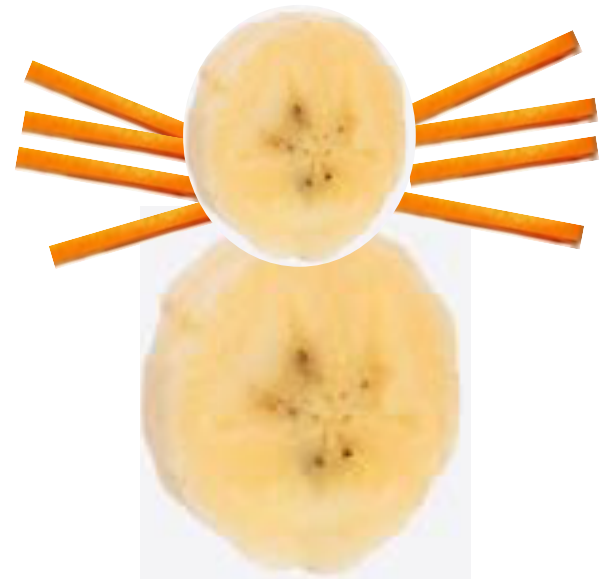
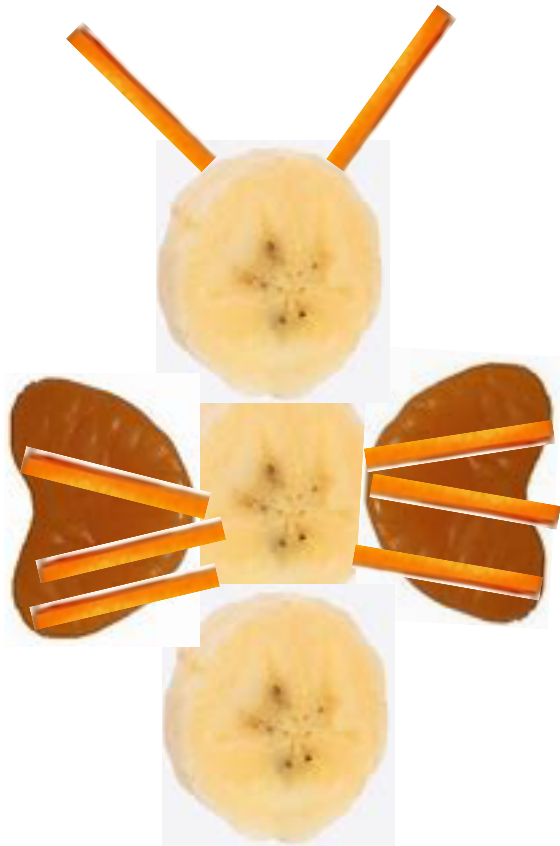
Spiders

Arthropod snack

- For insects--You can use slices of bananas to be the three insect body parts and thin slices of carrots to be the 6 legs and 2 antennae, with orange or tangerine slice wings.
- For spiders you can use two banana slices for the two body parts and eight thin sliced carrots for the 8 legs.
- Now compare the two arthropods. Which have antennae? How many legs does each have? Which has wings?



Arthropod comparison snack



- For insects glue 3 bottle caps top down on a paper. Cut two straws into 8 pieces—6 for legs and 2 for antennae and glue down. If you have muffin cups or coffee filters, use those for wings.
- For spiders use two container covers or small paper plates for the two body parts and 4 straws cut in half for the 8 legs.
- Once again contrast the two—how many legs, antennae, wings?



Arthropod contrast craft

