

What Are Arthropods
and Arachnids?

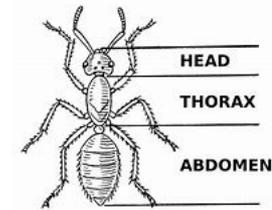
Tangled Webs!!!!



First let's put spiders in context:
Arthropods, also known as Creepy Crawlies

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

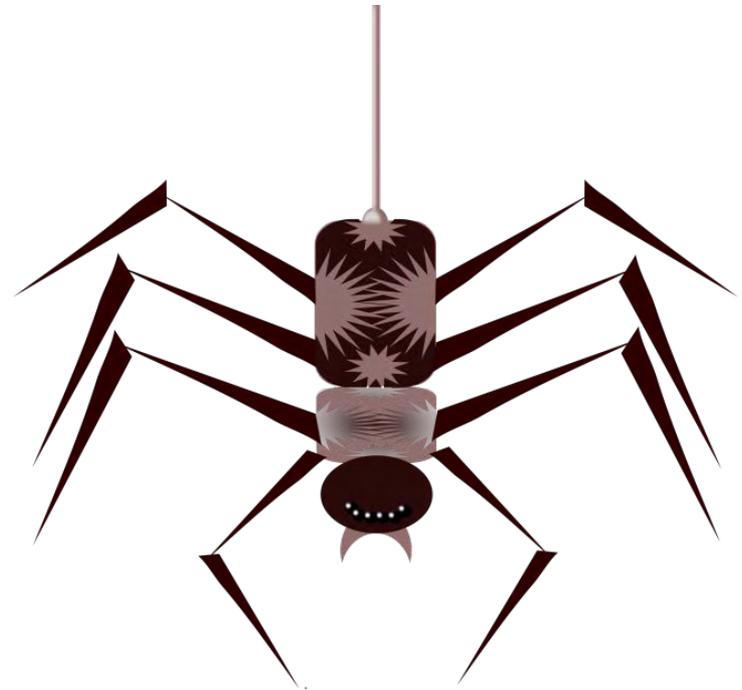
Arthropods have (big word alert!) exoskeletons; that means that their skeletons (hard structures) are outside their bodies like a suit of armor. Their exoskeletons are made of a cellulose like material, chitin, and minerals.



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.

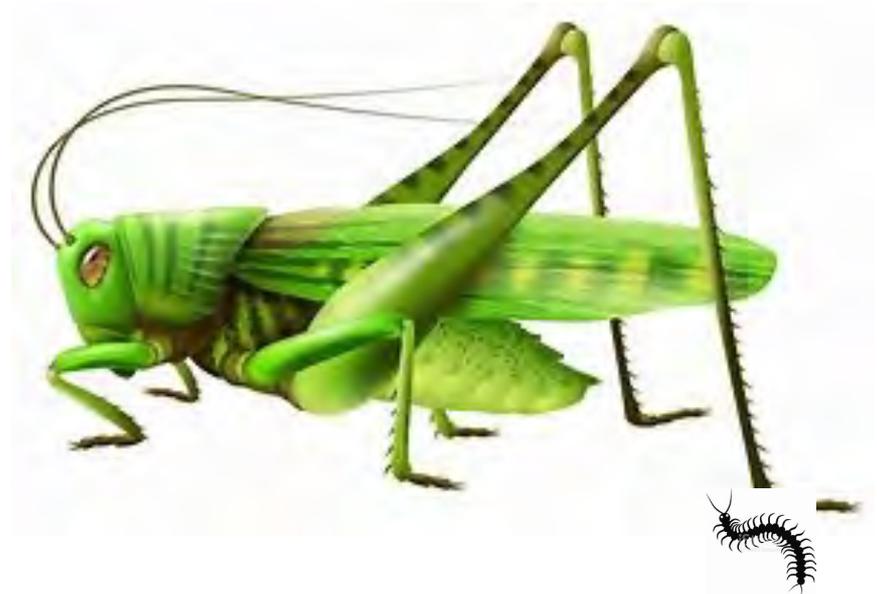
Arthropods

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





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



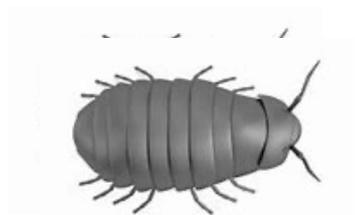
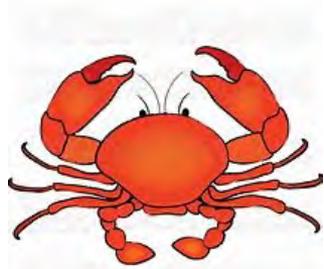


Arachnids



Insects

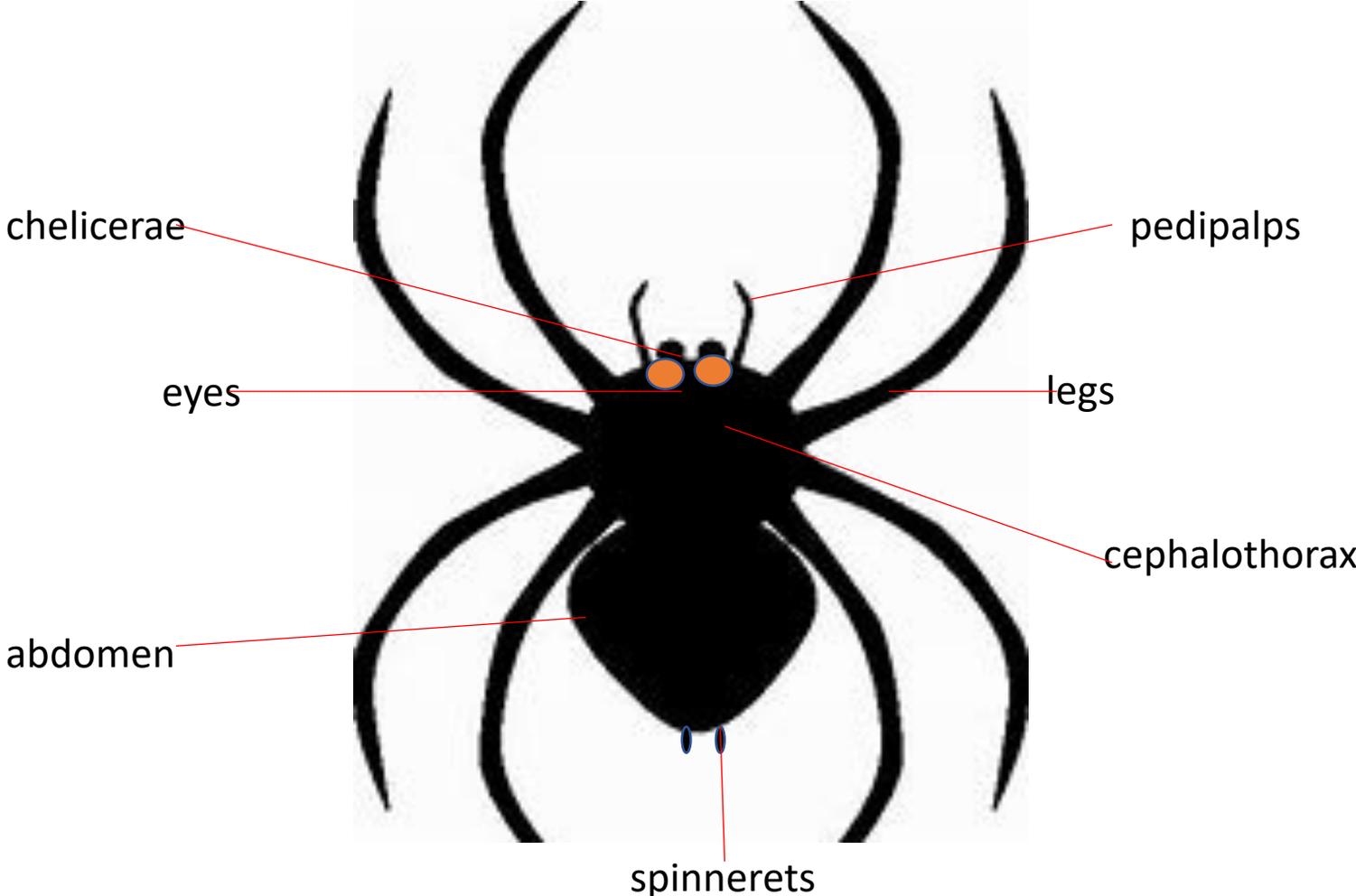
Crustaceans



Myriapods



Spiders are arachnids. They have two body parts; cephalothorax (a combined head and thorax) and abdomen. How would you like it to have 8 legs attached to your head? The spider's legs come out of its head! Spiders have 8 legs with 6 joints, and spinnerets to make silk for webs.





Spider Lore



- Spiders are arachnids.
- Spiders generally have 8 eyes, 2 large and 6 small.
- Their 8 legs have 6 joints, and 7 segments.
- They have scopulate (brush-like tufts of hairs) pads on the bottom of their feet and generally 2 claws. They smell and taste with hairs on their legs and pedipalps!
- The hard shell made of chitin (hard substance) over the cephalothorax is the carapace.
- The abdomen has a thinner more flexible covering.
- They have chelicerae for “chewing” and pedipalps to hold, tear, and push food into their mouths. They usually spray the prey with digestive fluid first to soften it.
- When they molt the abdomen splits.
- The spinnerets (spigot and spout) make silk from liquid chains of amino acids. The two body parts are cephalothorax and abdomen. Lyriform organs (slits) pick up sensory signals.

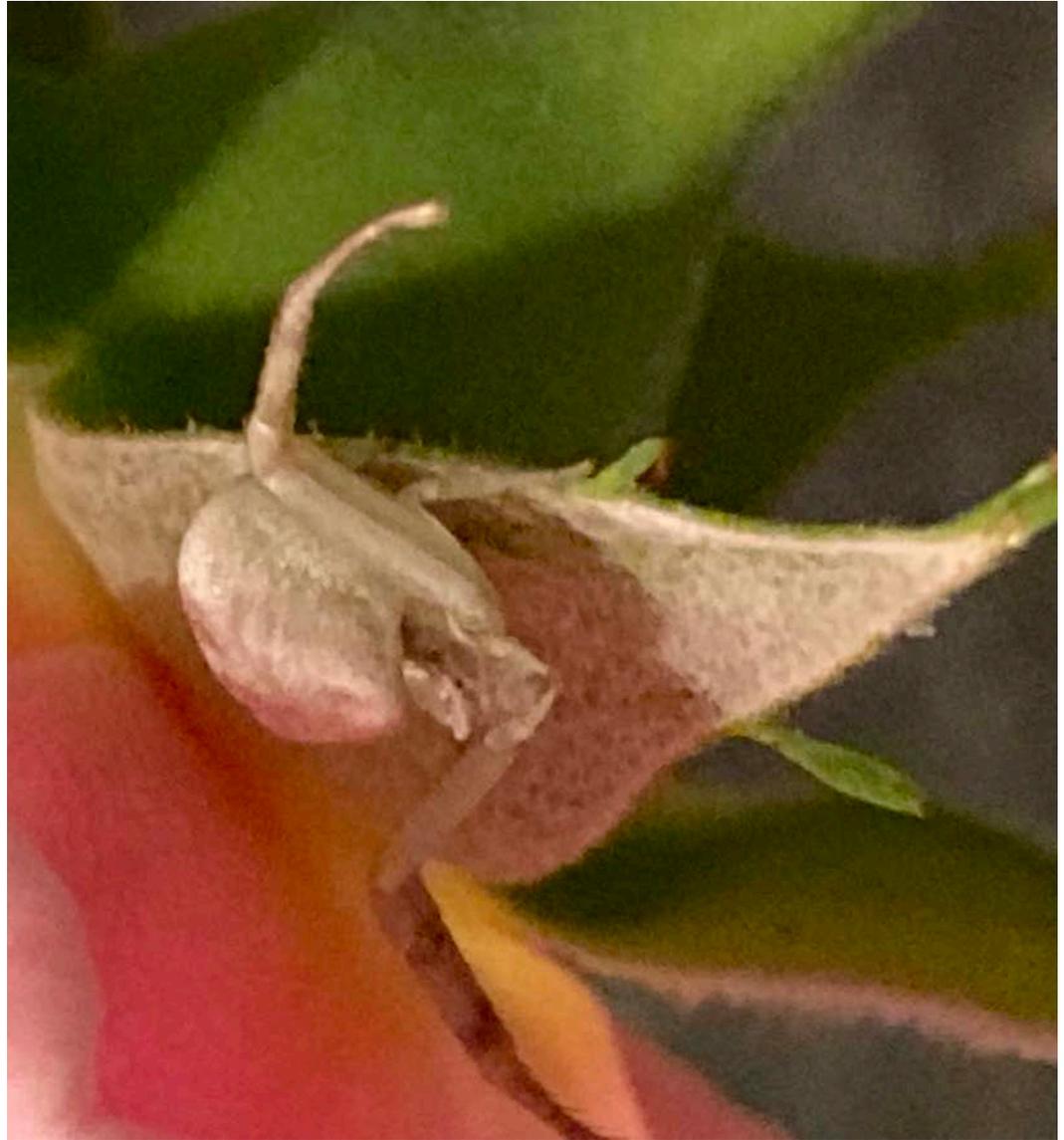


Spiders have hard exoskeletons, so they have to molt to grow.



More about how spiders work....

- Spiders have book lungs that look like pages of a book.
- Spider bodies are covered with hairs for tasting, smelling and differentiating vibrations.
- Spiders make 6 different kinds of silk. Spider silk is 5 times stronger than steel of the same diameter. Spider silk is made of protein.
- Spiders can “throw” their urticating (irritating) hairs to protect themselves.





Different spiders use
different ways of
hunting—webs, trapping,
jumping, even underwater!

What are some ways spiders hunt?

Wolf spiders hunt on foot on the ground.

Trap door spiders dig holes covered with dirt doors hinged with spider silk, ambush passing prey.

Some spiders hide inside flowers to surprise passing insects.

Spiders pounce, use bola threads and spit.

Some spiders even fish!

Some spiders cast nets.



More about spiders!

There are lots of different kinds of spiders--money spiders, orb-web spiders, trapdoor spiders, jumping spiders, crab spiders, huntsman spiders, to name a few.

Webs can take different forms--orbs or circles, hammocks, sheets, zippers, scaffolds, traps, and even diving bells.

Spiders can make trapdoors, or spit, to glue their prey, or make nets with bubbles, to catch prey in the water.





There are 6 main kinds of webs—different webs for different ways of hunting:

- Orb—good for flying insects
- Tangle—cobwebs found in houses
- Funnel—spiders hiding and ambushing
- Sheet—spiders hanging upside down from the web
- Triangle—fuzzy thread entangling the prey
- Mesh—outdoor cobwebs under rocks with a snare thread

Some ways of hunting

....

- Fishing
- Spitting,
- Bola
- Net casting
- Trapping



You can sing spider songs!

The Spider in the Web

Sung to: "Farmer in the Dell"

Spider's weaving a web, (hands together fingers curled)

Spider's weaving a web.(hands together fingers curled)

Spinning spinning, watching waiting, (hand spinning)

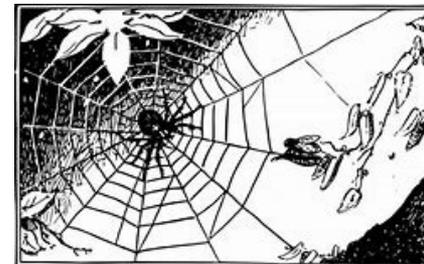
The spider weaves a web. (hands together fingers curled)

The spider's hunting bugs. (hand grasping)

The spider's hunting bugs. (hand grasping)

Spinning spinning, watching waiting, (hand spinning)

The spider traps a bug. (hands together fingers curled)



Spider Body to Mary Had a Little Lamb

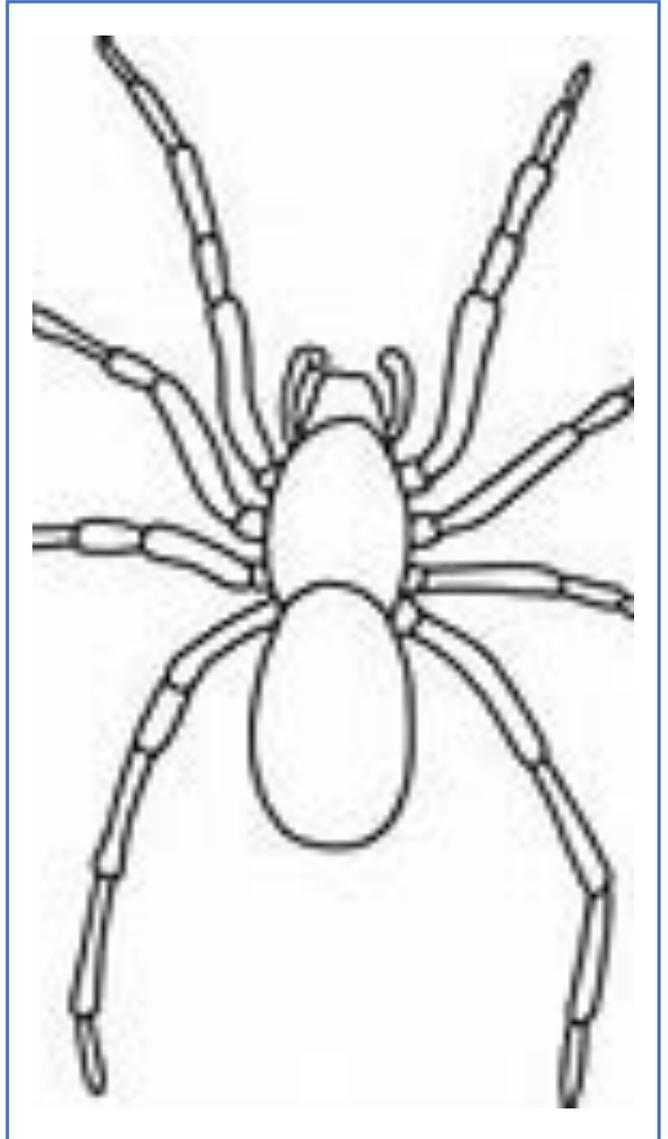
Spider bodies have 2 parts, have 2 parts, have 2 parts.
(2 fists)

Spider bodies have 2 parts, the head and abdomen.
(touching head and tummy)

Spider bodies have 8 legs, have 8 legs, have 8 legs. (4
fingers each hand)

Spider bodies have 8 legs and spinnerets for silk.
(twirling fingers)

Growing Up WILD



And their webs....

Clever Spiders



A spider's legs come from its head.



And spinnerets will make the thread



To build a web from limb to limb



And capture what bug ventures in!

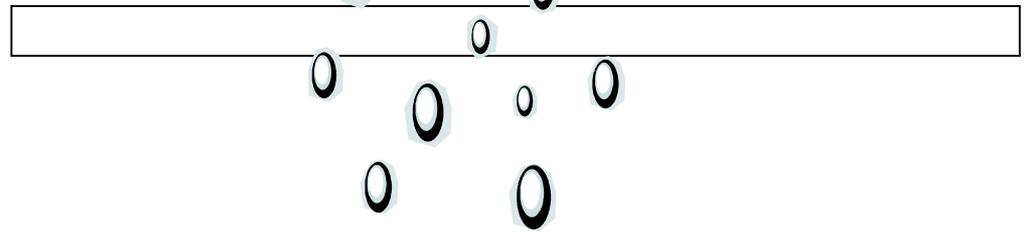
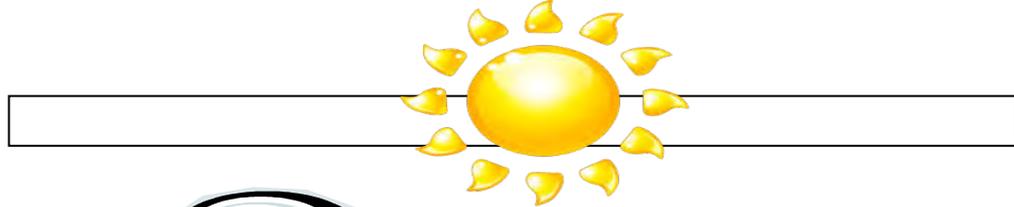
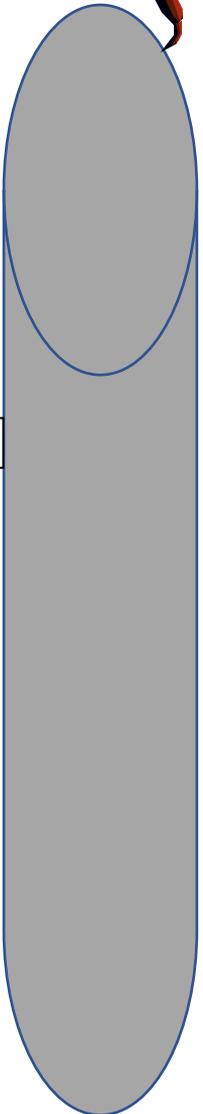
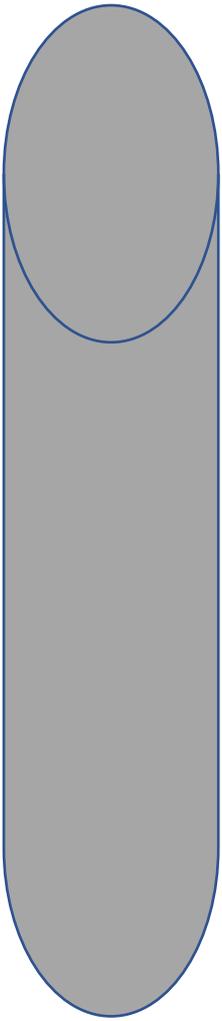




Can you be a
spider
hunter?

Where can you find a spider web? In a tree? In the grass? In a corner of the room? On a window shade? Is there a spider in the web, or wrapped up prey?

Itsy Bitsy Spider--popsicle stick with sun and cloud glued on front and spider ring to slide up and down. You can also make sliding cloud and sun to move up and down. Connect the tabs to make a ring for sliding..





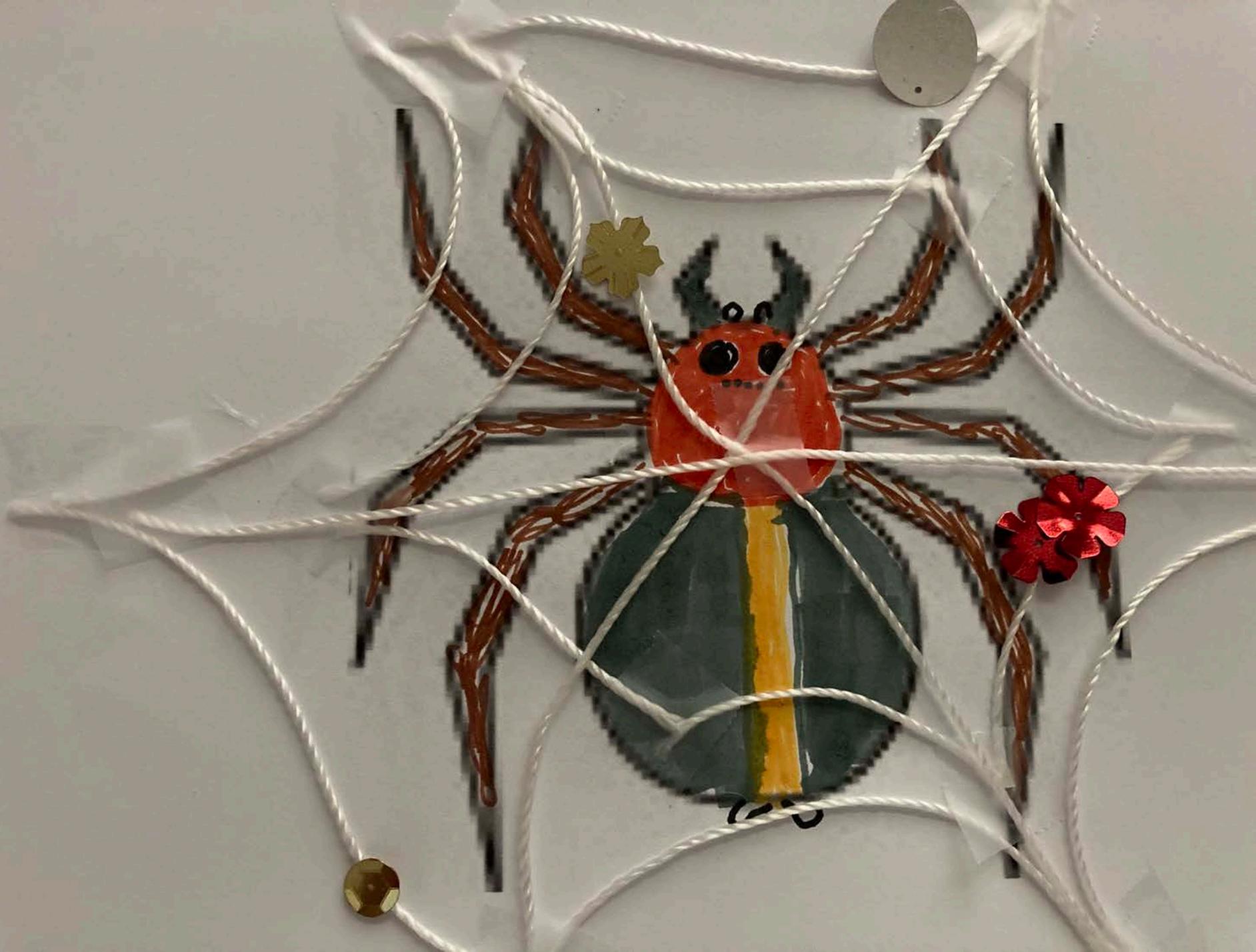


What can you use for your web and insects?

Decorate your spider and make a web out of yarn or string or thread!

- First decorate your spider.
- Now use thread, string, yarn or ribbon to make a web.
- Beads or sequins can be the insects trapped in the web.





You can imagine your spider!

And add a string web and bead bugs!

What kind of web will you give your spider? An orb, tangle, funnel, mesh, sheet or triangle web?

