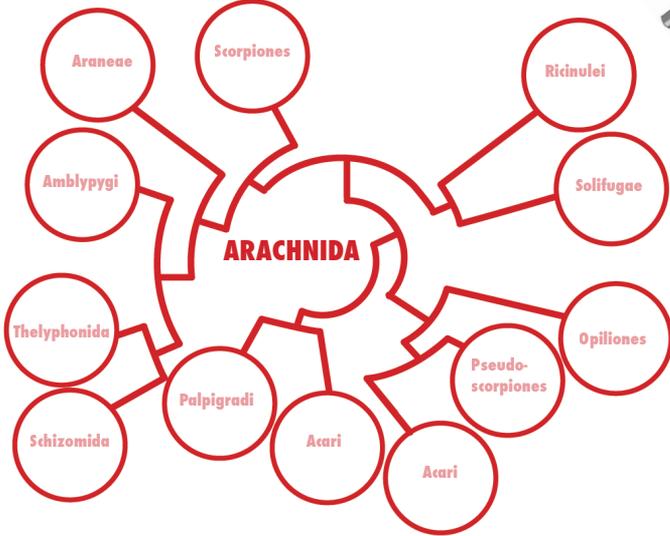


Grab
a pencil

GO
on a journey through
the exhibits

Discover
the wonderful world of
arachnids

Find all eleven stations. Place a stamp in the circle of the arachnid order as you complete the booklet activities.



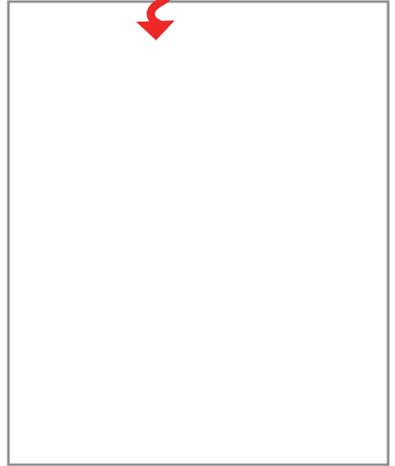
ORDER ARANEAE (SPIDERS)



Look at the different colors, shapes, sizes, and lifestyles of spiders.

Imagine what kind of spider you would be.

Draw it below.



Notice that spiders have up to 7 different types of silk glands, each of which produces silk with different properties.

Draw a spider's web between these branches. What types of silk would be used? **Circle** the names of the glands that produce them.

- Major ampullate gland
- Minor ampullate gland
- Flagelliform gland
- Aciniform gland
- Aggregate gland
- Tubuliform gland
- Pyriform gland



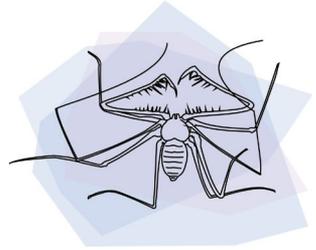
At Home - Take a walk outside, or even around your house and find three spider webs that differ in their shape. Can you find the spiders who live in the webs? Do the spiders differ in size, shape or color?

ORDER AMBLYPYGI

Look at how long the 1st pair of legs are compared to the other walking legs. These animals taste, smell, touch, and listen with their legs.

Reach into one of the boxes on the table and **Feel** the object(s) inside.

Write three words that best describe what you feel.



All amblypygids are nocturnal and leave their home refuges at dusk to forage. They return to their refuge at dawn. Many are known to travel far distance and some scientists believe that they use their sense of smell to find their way around. **How** might you test this idea?



Imagine what it is like to wander around a tropical rainforest at night.

Cool or **Scary?**

At home - Grab a notebook and pencil and find a cozy spot outdoors. Sit down and close your eyes. Use your senses other than vision to explore the world around you. Describe what you hear, smell, taste, and touch - write it down. Do this at three different times of day.

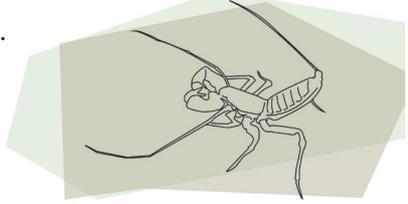
ORDER THELYPHONIDA (VINEGARROON)

Take a squirt bottle from the table and **Grab** a cotton ball.

Squeeze the liquid from the bottle onto the cotton ball.

Smell the cotton ball. Do you recognize the smell?

What does this remind you of?



Imagine that you are a predator about to eat one of these creatures when a stream of vinegar-like liquid is shot at you from its hind end. Would you continue to pursue this prey?

YES or **NO**

Vinegaroons have glands on either side of their anus (hind end) that produce defensive chemicals. Acetic acid is the dominant component. They can spray as far as 80cm (>31 inches). Can you think of any other animals that have a protective chemical defense? **Sketch** the animal in this space.



At home - Go in your backyard or to a park and catch five arthropods. Do any of them have an obvious defense? Are they camouflaged? Are they brightly colored, potentially warning predators off? Do they make a sound when startled? Did you notice any foul smells upon collecting them? Make notes on your observations and start a list of arthropod defenses. (Be sure to release your animals so others can learn from them as well!)

ORDER SCHIZOMIDA

Notice the similarity between these arachnids and the thelyphonids and amblypygids. Can you tell how they differ from the other arachnids you have seen today?

Schizomids are small arachnids about which we know very little. They are found in the leaf litter and frequently go unnoticed. What other small leaf litter animals might also frequently go unnoticed?

Pick up a pair of soft forceps from the table.

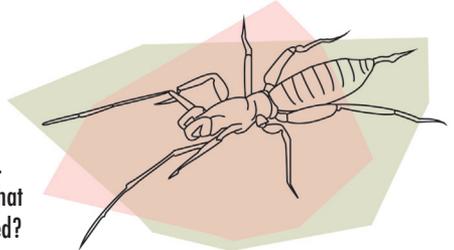
Find an available tub of leaf litter.

Dig through the litter. Do you see any animals?

Write down the first two animals you find.

If you did not find any animals, write down the names of animals you think you might find digging through leaf litter.

Which of these do you think schizomids might eat?



At home - Grab a garbage bag and go out to the woods. Pick up a few armfuls of leaf litter and put them in the bag (check yourself for ticks afterwards). Bring the bag home and place a few handfuls of your collected litter into a colander. Put the colander in a plastic tub. Shake the colander and then place it directly under a light. Monitor the tub underneath to **SEE** what critters climbed or fell into the tub.

ORDER SCORPIONES

Notice that some scorpions have BIG palps and small bulbs at the end of their tail while others have small palps and BIG bulbs at the end of their tails.

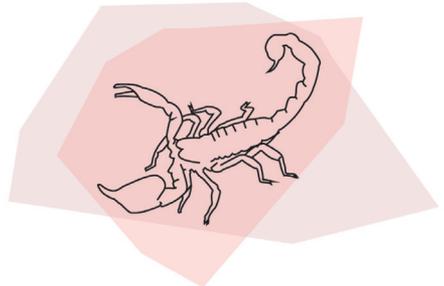
What do you think is kept in those bulbs?

Which scorpion do you think is most dangerous? (big palps/small bulb or small palps/big bulb.)

Observe a scorpion under a black light. What do you notice? All scorpions fluoresce, but scientists do not know how or why fluorescence has evolved in scorpions. Can you think of ways that scorpions might benefit from fluorescing?

List them in the space below.

Maybe **YOU** can be the scientist to figure out this evolutionary mystery!



At home - Search on the computer for research articles or websites about scorpion venom. Components of scorpion venom are being studied as potential treatments for a variety of human diseases and disorders. Can you find out which ones?