

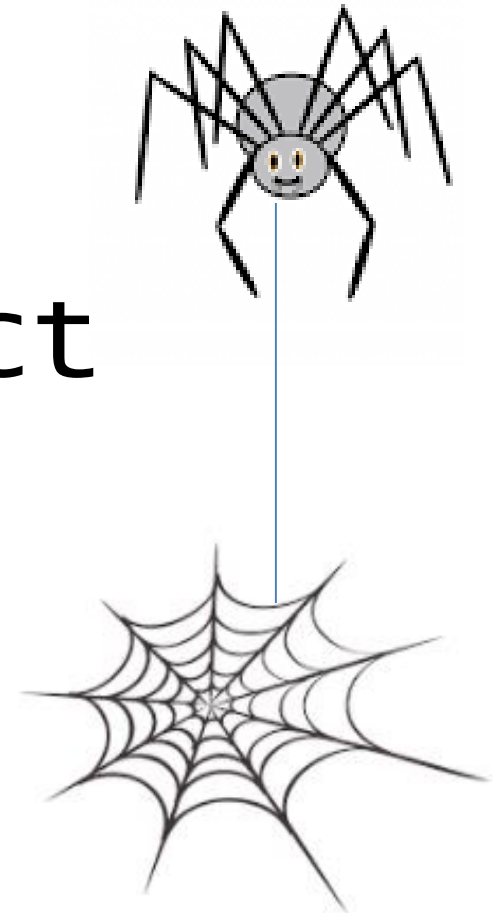
# The Spider Project

A project by 3-4 year olds  
in the MWF Class

Preschool at the Buffalo Zoo

Project date: September 8<sup>th</sup> – December 20<sup>th</sup>,  
2017

*Author: Anna Iletto*  
*Early Childhood Program Specialist*



# Introduction

At gathering time, the class sang the “Hello Song” and everyone shared their feelings for the day. A child, E.W., said he was happy because he caught a spider and its leg was bent. E.C. asked, “What is a spider?” E.S. replied back, “...spider has 8 legs and many eyes!” More information about spiders came about such as:

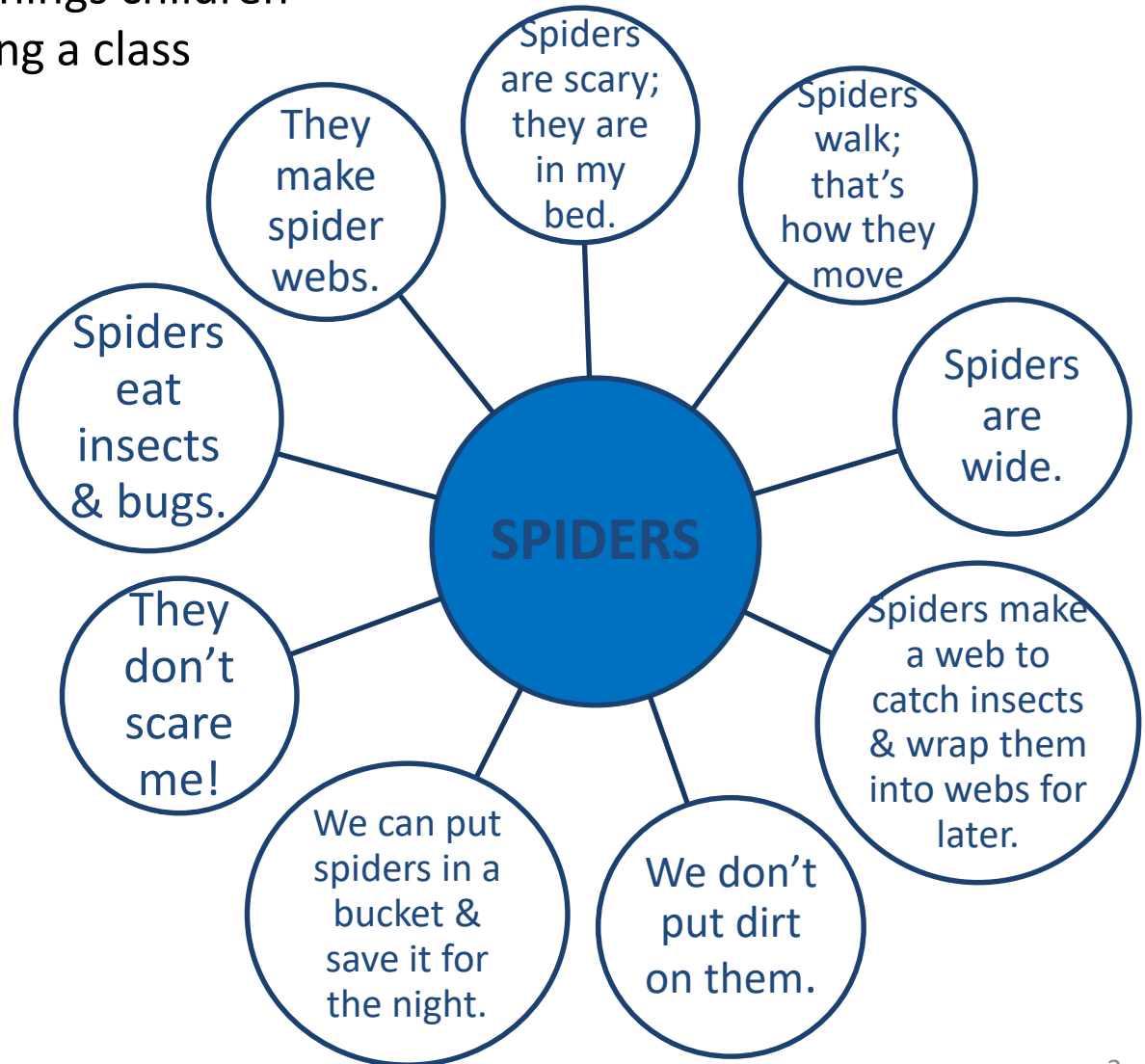
- Spiders bite
- Spiders are scared
- Spiders are little
- Spiders are black
- They make webs

Ms. Anna ended the discussion with a fun song, “Itsy Bitsy Spider.” The class decided to look for spiders during their outdoor time.



# Web #1: What we KNOW about spiders

- Ms. Anna recorded the things children knew about spiders during a class discussion.



# Phase II: Developing the Project

- The children were at the Nature Playground at the Heritage Farm and started crawling like spiders on tree logs and wooden beams.
- The children looked for spiders and ended up finding a lot of spider webs between rocks, plants, sign boards and carriages.





# Phase II: Developing the Project

- L.C. started making a spider trap so he could look at spiders up close.
- Soon he found a crawling creature in the spider trap. Could it be a spider or something else? E.W. said, “It’s a baby spider.” E.S. said, “But it’s red; it can be a tick!”



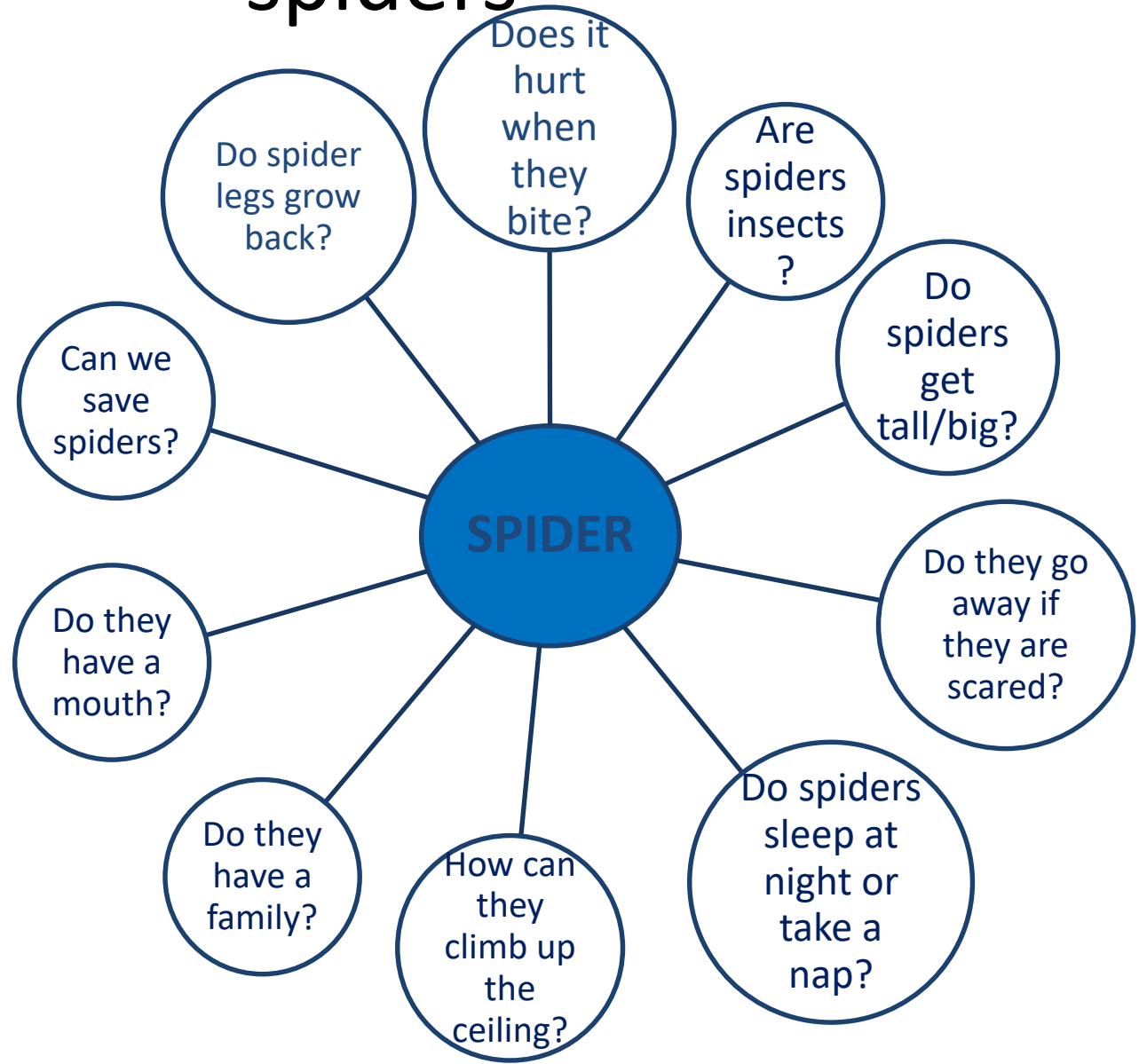
# Phase II: Developing the Project

- The children finally spotted a big spider in between the fence log of the farm.
- Everyone took a peek to see our first spider of the day. E.C. said, “Look! It started to go away!” R.T. added, “It’s scared.”



# Web #2: What we WANT to know about spiders

- When the class came back from their walk, Ms. Anna recorded the things the children wanted to know about spiders.
- More questions were added and became part of the project investigations.





# Investigation #1:

## Initial Representation: Spiders – Part A

Ms. Anna asked the children to draw what they saw in the playground.



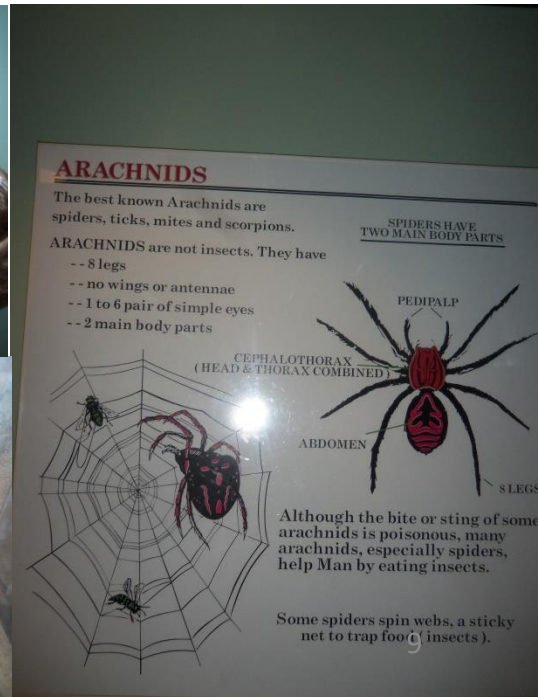
The children drew webs and spiders using markers and paper. They practiced drawing shapes like circles for the spider's body and straight and curved lines for the webs.





# Investigation #2: Are spiders insects?

- We visited the biggest spiders in the Zoo at the Diversity of Life exhibit – the tarantulas! We could see their body parts really well. C.M. counted all 8 legs of a tarantula.
- We also saw a big poster showing a spider's body parts. We learned that spiders are arachnids, not insects!
- The best known arachnids are spiders, ticks, mites and scorpions!
- A spider's body has 8 legs, two main body parts, 1-6 pairs of simple eyes, and no wings.



# Investigation #2: Insects and Arachnids-

## *Similarities and Differences*

- During our walk, the group looked for other bugs and compared them to the spider's body. "This has 6 legs, Ms. Anna!", E.C. counted. E.W. found another one, too and pointed out, "This one has wings! It's different."
- Sorting activity – The children separated the bugs from arachnids and reviewed their body parts.





# Investigation #3: How Can Spiders Climb Up the Ceiling?

- We read a book, “Spiders” by J. Resnick and learned that a spider’s legs are tools for balancing. A type of spider like the Wandering Spiders have two claws and a tuft of hair on each foot to help them cling to slippery surfaces.
- While playing in the playground, the children started to sing “Itsy Bitsy Spider” and crawled into tunnels like the Wandering Spiders. “Sticky feet,” R.T. said. They also tried crawling on a tree to see if they could move like spiders do.





# Investigation #4: Do they go away when they are scared?

- The children also spotted some spiders in the classroom and observed how the spiders reacted when the children came close. Ms. Anna saw one in the art room and called anyone who was interested in looking at it. E.W. said, “Look at the long legs!” Ms. Anna suggested taking a photo of it and searching online to find out what type of spider it was. We were able to take lots of photos because the spider was not moving.
- While the kids were playing in the classroom, they saw a spider in the block area. We gently placed our bug catcher on the floor so it could walk right inside of it. As soon as we put the lid on, the spider curled up like a ball. “It’s not moving,” J.M. commented. Ms. Sandy told the kids that when spiders get caught, they pretend to be dead even though they are not.
- We read the book, “Spiders” by I. Podendorf and learned that spiders are very good at protecting themselves from danger. The House Spider sometimes acts as though it is dead when an enemy (like us) comes near. The color of some spiders help them to hide from their enemies called “protective coloration.”



# Investigation #5: Spider research

Ms. Anna borrowed books from the library so the class could study and look at different photos of spiders and webs. Their favorite one was, "I Wonder Why Spiders Spin Webs?" by A. O'Neill. The Zoo docents also got to pick their own favorite spider book to read.



We also watched spider videos online to learn more about their behaviors and habitat.

The Erie 1 BOCES high school students, our book buddies, read books with the kids and shared their interest in spiders.





# Investigation #6: Can we save spiders?

- E.W. brought in a spider in a “bug house” for show and tell. He told his friends where he got it from, and, that it was missing one of its legs so he saved it and placed it in a “bug house.” He talked about the items inside the spider house that makes his spider happy.
- After looking at E.W.’s “bug house,” the kids wanted to see different places or areas where spiders are found and how they live.
- E.W. and E.C. found a spider in the corner of a tree and wondered if the spider needed help or was just being still to catch a bug.





# Investigation #7: Do spiders have a mouth?

- At our fall harvest event, we noticed a big spider web in the garden and saw lots of bugs stuck in them. E.W. pointed out that some of them were still wiggling and alive! E.W. said, “The spiders just caught them, it’s fresh!”
- The following day we went back to the spider exhibit and checked out its mouth. “That’s how they bite?”, L.C. asked. Spiders have different methods of catching their prey. Ms. Sandy said that a part of a spider’s mouth is shaped like a short drinking straw that is used for sucking up the liquefied insides of its prey.
- In the kitchen area, they talked about what types of foods other insects or animals eat. The children compared the spiders’ abilities to capture their prey to animals and other insects.



# Investigation #7: Do spiders have a mouth?

## *Ways to catch food*

- After seeing some bugs stuck on a spider web, the children were up for more spider web hunting. They found a lot of webs by the elephant exhibit. They described the web's different shapes and sizes: big, small, round, oval and a square! The children wondered if there was a special name for each web.
- From one of the spider articles we read, we learned that all spiders are born to spin webs. Many spiders will build webs to catch prey, but there are also lots of spiders who prefer to hunt.





# Investigation #8:

## Representation of spiders with webs – Part B

- The children used paint to draw more representations of spiders and spider webs. They drew the ones they saw outdoors. They asked Ms. Anna for specific colors to use for their spider.
- The children also constructed a spider's body parts with play dough, sticks, and rocks.
- From the funny book, "Be Nice to Spiders" by M.B. Graham, we learned that we should leave the spiders alone so they can help us get rid of the many annoying bugs. We also learned one of the ways a spider systematically creates a web:



First, the spider makes an outline, then goes to the middle of that outline. From the middle, it connects the web to each corner of the outline. Finally, it makes small inner circles then works its way out to make bigger circles. We had so much fun creating a big spider web using yarns.



# Investigation # 8:

## More Representation

At the woodwork bench-  
C.S. and J.M. made some  
webs out of screws and  
wooden blocks. J.M. said,  
“This looks like a spider  
web! I need more wood for  
the silk.”



Art: Black paper and chalk-

The children were given chalk and black  
paper and remembered the story “The  
Very Busy Spider”, by E. Carle. The spider  
rested at night after a busy day. They said  
the paper is dark like the night!



The children pretended resting too  
like a spider after a busy day in the  
classroom.



# Investigation #8:

## Revisit Representation

Choice time – L.C. drew a picture of a big spider web with a spider in the middle (with 2 main body parts, 2 fangs, 8 legs and 8 eyes)!



Journal writing – Ms. Anna reviewed the simple shapes (circles) and straight lines to draw a spider or a web.





# Investigation # 9:

## Do spiders have a family?

- We watched a video about how most spiders are solitary (live alone), but some live in colonies or in groups. “I live with daddy,” C.M. added.
- A female or mommy spider lays from 2 to 1000 eggs; she wraps it in an egg sac made of silk until her babies hatch. “Wow, that’s a lot of babies!”, E.S. said.
- Baby spiders fly (ballooning) away into the air to spread out.
- Mr. Damon showed a picture of “spiderlings” on his phone and the kids gathered around to look at it. “They’re tiny!”, C.M. said.





# Investigation #10: Types of spiders and spider webs

- After our initial spider hunting, we discovered more spiders in the classroom and outdoors. We took photos of them so we could look them up online and see what type of spiders they were.
- Ms. Anna also made a “Spider Home Project” that the children could do with their families at home. This activity allowed the children to discover common spiders and see the different places where they live or explore (e.g. home, garage, attic, etc.).



# Investigation #11:

## Do spiders get tall or big?

- From the “Spider Home Project,” the children were able to find more spiders and webs at their place. Some of them were big with long legs (tall ones) and some were small.
- The children also wanted to see how tall they were compared to the biggest spiders we found, so we traced their body to see the difference.





# Investigation #12: Visiting expert

- Ms. Liz, a member of the Education staff, came in with her two tarantula pets named Nelly (Costa Rican Zebra) and Rosie (Chilean Rose). She shared with the children about how she was scared of spiders until she visited a museum in Denver full of beautiful bugs and insects. She helped us with some questions we still had about spiders.
- Do spiders get tall/big? “Yes, they get new clothes (molt) when they get bigger.”
- Do spider legs grow back? “Yes, they can grow back but they are not the same as before. First they molt before growing their legs back.”
- Does it hurt when they bite? “Spiders don’t have teeth but two fangs. The bite would be like a bee sting or a pinch.”
- Do they take a nap? “Spiders don’t sleep or take a nap, but they do rest.”
- Do spiders have a family? “Spiders don’t have a family. When mommy spiders lay eggs, babies fly away and leave.” E.C replied, “That’s sad.” Ms. Liz said spiders are hungry all the time and have to compete with each other for bugs.
- Do they go away if they are scared? “Don’t tap a spider’s enclosure because they get scared. They will also bite when they are scared.”



# Investigation #12: Visiting expert

- The children were able to touch the exoskeleton that Ms. Liz brought in with her. “It’s soft!” L.C. said. “It has hair!” E.C. added.
- The children noticed a thermometer in the enclosures. Ms. Liz said they like warm temperatures. Although they are furry, they get cold easily and will get sick. “I have to wrap them in towels to keep them warm. The temperature tells me if it’s warm. I also keep my house warm for them.”
- Ms. Liz also shared interesting facts about spiders: (1) “They don’t have eyelids so they can’t blink like we do.” (2) Small mites can make them sick.”
- Ms. Liz also showed the forceps she used to pick up or remove items in the spider’s enclosure like a bowl of water or crickets.



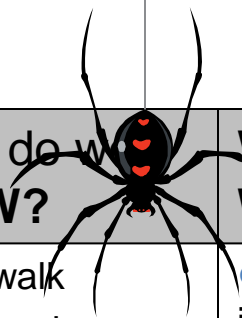


# Culminating Event

- To review everything we learned from the Spider Project, the children made a spider enclosure. They selected the materials they wanted and named what purpose it would serve for their spider – contraptions, playground, water container, window, etc. C.S made a bridge for his spider to crawl.
- We used the spider pictures from their “Spider Home Project,” laminated them and used it as puzzles. We guessed what type of spiders they were.
- We also practiced sorting different types of spiders – from spiders that are “low risk”, those who have “painful bites,” and the “deadly and dangerous ones.” We also sorted them according to the type of web they make.



# KWHL Chart



What do we <b>KNOW</b> ?	What do we <b>WANT</b> to know	<b>HOW</b> can we find out?	What did we <b>LEARN</b> ?
<ul style="list-style-type: none"> <li>● They walk</li> <li>● They eat insects</li> <li>● They make webs to catch insects</li> <li>● Some are scary and some are not</li> <li>● They are wide</li> <li>● We don't put dirt on them</li> <li>● We put them in a bucket to save it</li> </ul>	<ul style="list-style-type: none"> <li>● Does it hurt when it bites?</li> <li>● Do they grow their legs back?</li> <li>● Do they have a mouth?</li> <li>● Can we save spiders?</li> <li>● Do they have a family?</li> <li>● How do they climb up the ceiling?</li> <li>● Do spiders sleep at night?</li> <li>● Do they go away when they are scared?</li> <li>● Are spiders insects?</li> <li>● Do spiders get tall or big?</li> </ul>	<ul style="list-style-type: none"> <li>● Observe and explore outdoors – find spiders and webs and visit exhibit in the Zoo</li> <li>● Draw/make/build representations</li> <li>● Research – books and videos</li> <li>● Home project with families</li> <li>● Experiment behaviors with your own (e.g. climbing, eating) and identify similarities and differences</li> <li>● Record findings in project journal</li> </ul>	<ul style="list-style-type: none"> <li>● Spiders are arachnids and they have a unique set of body parts</li> <li>● They have different ways of getting their prey (e.g. build web to catch prey, hunt, jump, spit, etc.). Big spiders catch tadpoles, birds and even fish!</li> <li>● They use webs in many ways (not just to catch prey)</li> <li>● They come in different sizes, shapes, colors (types)</li> <li>● Each spider has their own type of web.</li> <li>● Spiders are engineers! They have a systematic way of building their webs.</li> <li>● Do not play with spiders although very few can bite and hurt people. Most kinds are helpful so leave them alone to do their job!</li> <li>● You can save a spider by building a safe enclosure with the help of an adult.</li> <li>● Spiders molt and shed skin when they get bigger.</li> </ul>