



# Spiders: Spooky or Cool?

Teacher's Booklet



Texas AgriLife Extension Part of the Texas A&M University System

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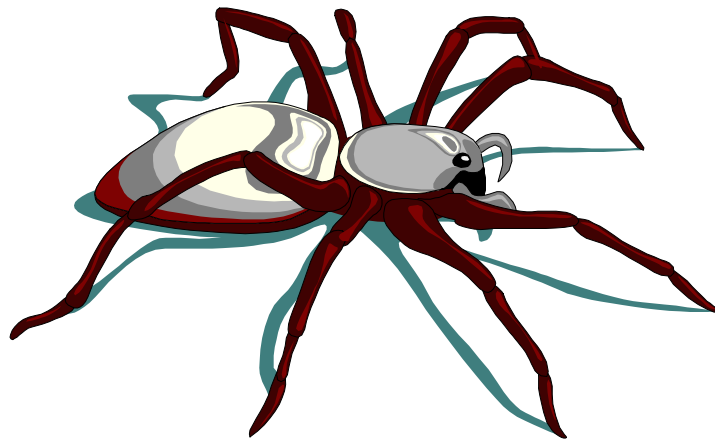
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## Preface

Spiders make up the largest group of arachnids. Despite the handful of poisonous species, many spiders are harmless contrary to fears and beliefs. Although the mere presence of spiders and their webs can be a nuisance, they are beneficial because they prefer to feed on harmful insects (such as flies) and mites.

Spiders are often called insects or "bugs," but they are actually quite different and the distinction between the two and among common species should be known. Some examples of different types of spiders include: the black widow, brown recluse, sac spiders, tarantulas, jumping spiders, wolf spiders, and orbweavers.

In this booklet are a variety of exercises designed to help educate your students about spiders and way they may be beneficial or harmful.



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## Lesson 1 – What is a Spider?

### Overview:

Students will read the following passage in the classroom and then answer relevant questions pertaining to the passage. The students will get an overview about spider biology and the differences between spiders and insects.

### Instructions:

Read the passage either in groups or as a class.

### Objectives:

Students will be able to recognize spiders from insects, they will know what and how spiders eat, and they will know why spiders might attack.

### TEKS:

Science: 2.1a, 2.1b, 2.2a, 2.2b, 2.3a, 2.3b, 2.4a, 2.4b, 2.6a, 2.6b, 2.8a, 2.8b, 2.9a, 2.9b

Science: 3.1a, 3.1b, 3.2a, 3.3a, 3.3b, 3.5a, 3.5b, 3.8b, 3.9a, 3.9b

### Materials:

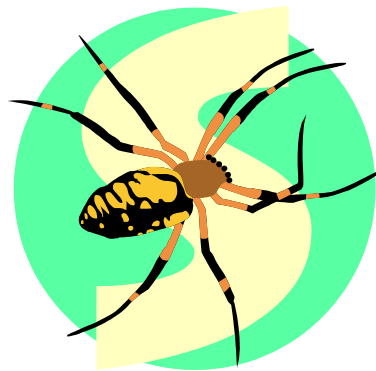
Handouts of reading exercise

Overhead copy of reading exercise

Wrap up questions for Lesson 1

Activity 1-1

Activity 1-2



## Lesson 1 – What is a Spider?

### Questions to ask before reading the passage:

What is a spider?

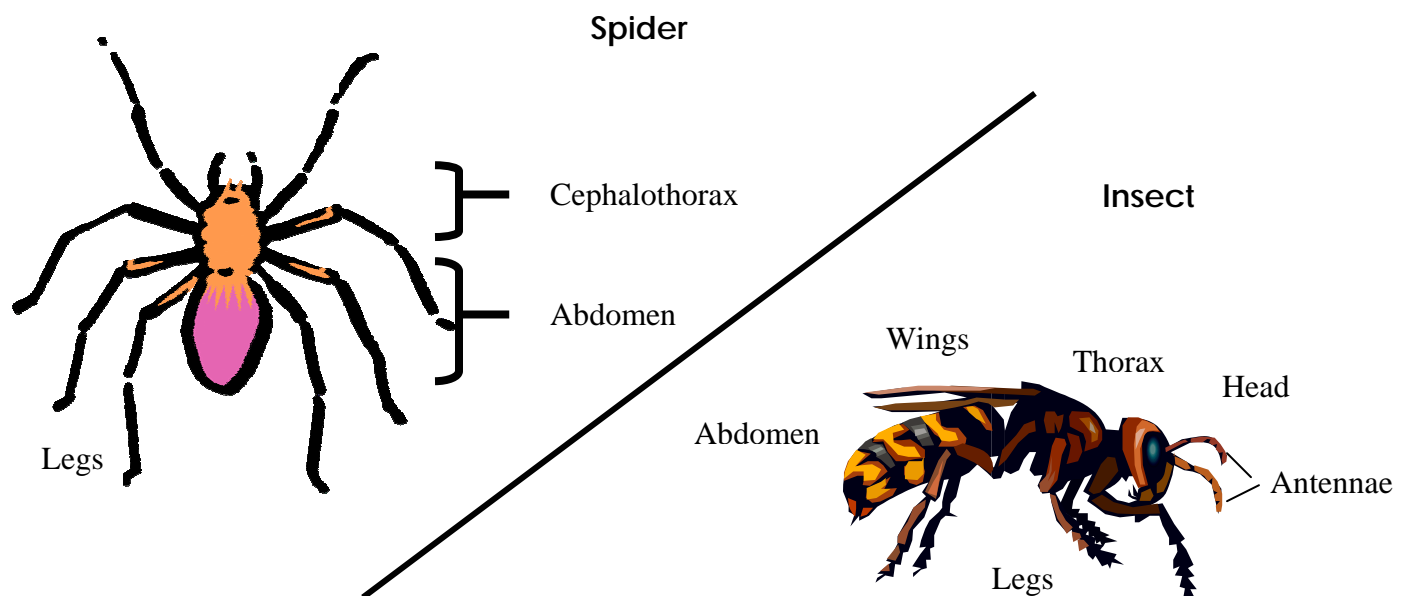
Are spiders and insects the same?

What characteristics make a spider a spider?

### Reading Exercise

There are about 35,000 species of spiders in the world and about 3,000 are found in North America!

Spiders are NOT insects, they are **arachnids**. There are many differences between spiders and insects. Spiders have 8 legs. All arachnids have 8 legs. Insects only have 6 legs. Insects have three body parts – a head, thorax and abdomen. Spiders have two body parts. Their head and thorax are fused to make **cephalothorax**. The cephalothorax is where the spiders' eyes are found and the legs are attached. The hind end of a spider is called the **abdomen**. The abdomen is where spiders spin silk. Spiders are also missing two things that insects usually have. Spiders never have antennae or wings.

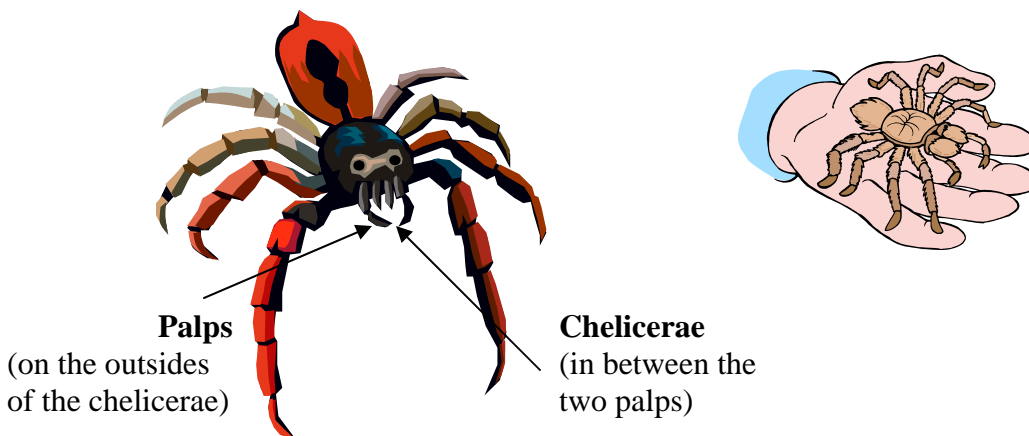


Spiders may be all sizes and colors, but all spiders are **predators**. This means that they eat other animals. Spiders can eat animals as big as birds, lizards, and mice! The spider's favorite food is insects.

When spiders catch their food, they use fangs called **chelicerae** (cha-lis-er-ey), found below their eyes on the cephalothorax. Fangs have venom that paralyze the prey and helps digest their food to make it easier to eat. Most spiders also have **palps** that help the spider feel and taste.

Spiders help catching their prey because they usually have 8 eyes and hairs all over their body. These hairs help them feel when their prey is near.

Even though spiders can be scary, only a few types can hurt you. But, remember, all spiders can bite and if they feel scared, they may attack. Never squeeze a spider, corner them, or poke at them. Be careful with spiders and they will be careful with you.



### Wrap Up Questions for Lesson 1:

Is a spider an insect? No, they are arachnids

What are the body parts of spiders? Cephalothorax and abdomen

What are the main differences between spiders and insects? Spiders only have two body parts, insects have three; spiders have eight legs, insects have six; spiders never have wings or antennae and most insects have both.

What is the favorite food of most spiders? Insects, but they also eat birds, lizards and even mice.

## Activity 1-1: Spiders vs. Insects

Match the following body parts to the correct arthropod. Some words may be used more than once

Word Bank		
Abdomen	Chelicerae	Palps
Antennae	Head	6 Legs
Cephalothorax	Thorax	8 Legs

### Insect

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_

### Spider

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_

## Activity 1-1 Answer Key: Spiders vs. Insects

Match the following body parts to the correct arthropod. Some words may be used more than once

Word Bank		
Abdomen	Chelicerae	Palps
Antennae	Head	6 Legs
Cephalothorax	Thorax	8 Legs

### Insect

1. \_Head\_\_\_\_\_
2. \_Thorax\_\_\_\_\_
3. \_Abdomen\_\_\_\_\_
4. \_Antennae\_\_\_\_\_
5. \_6 Legs\_\_\_\_\_

### Spider

1. \_\_Cephalothorax\_\_\_\_\_
2. \_\_Abdomen\_\_\_\_\_
3. \_\_Chelicerae\_\_\_\_\_
4. \_\_Palps\_\_\_\_\_
5. \_\_8 Legs\_\_\_\_\_

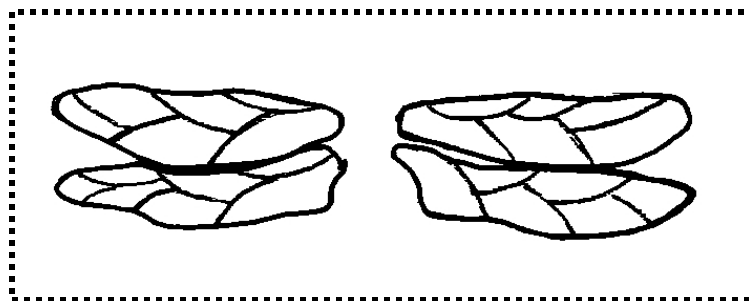
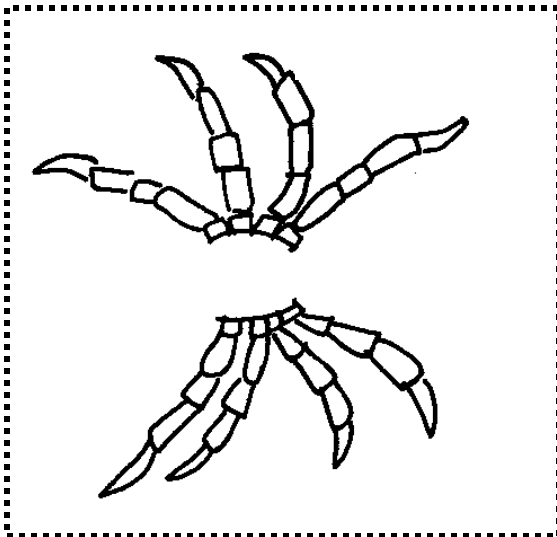
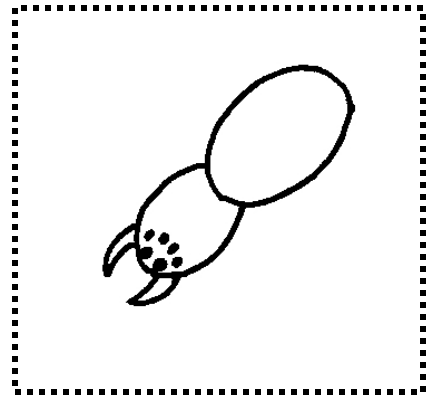
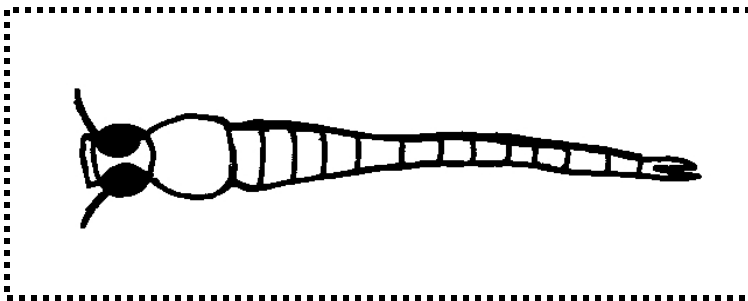


## Activity 1-2: Arthropod Body Parts Matching Game

Cut out the following body parts and glue them together to make a spider and an insect. Start by dividing the body parts into piles: one for insects and one for spiders.

After you have glued or taped your body parts together, label them with the correct terms:

Abdomen, Antennae, Cephalothorax, Chelicerae, Legs, Thorax, Wings



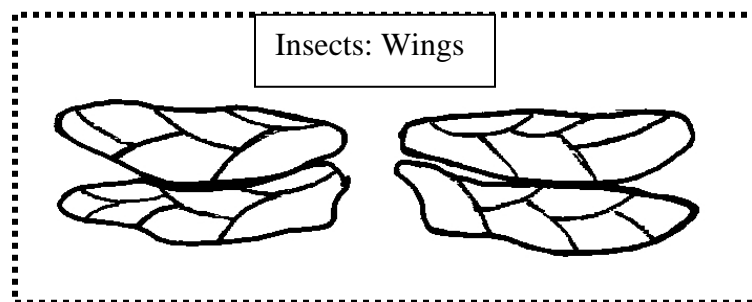
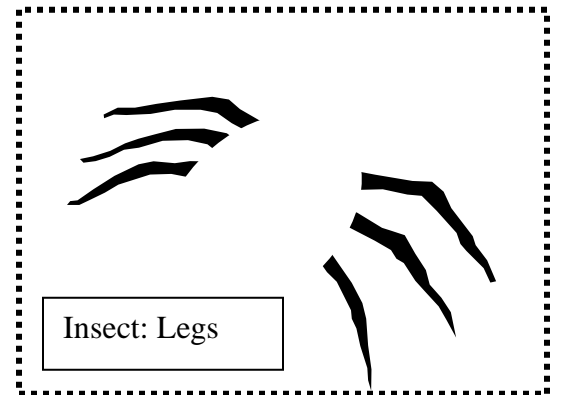
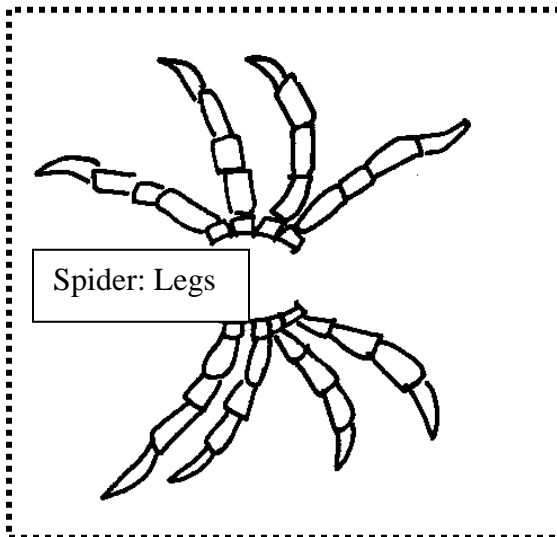
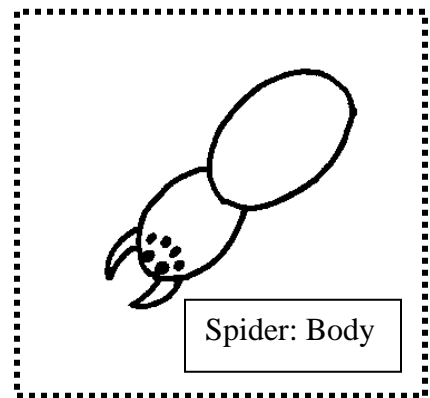
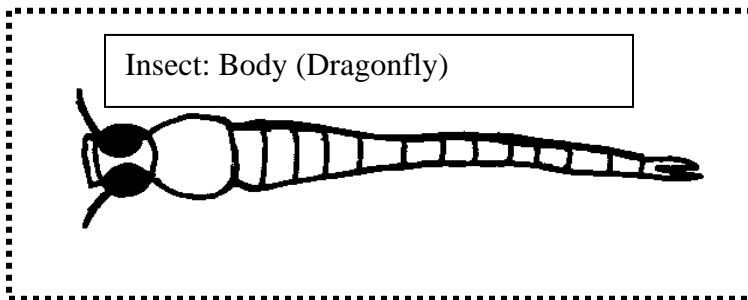
Note to Teacher: Use copy machine to enlarge pieces of insects and spiders.

## Activity 1-2 Answer Key: Arthropod Body Parts Matching Game

Cut out the following body parts and glue them together to make a spider and an insect. Start by dividing the body parts into piles: one for insects and one for spiders.

After you have glued or taped your body parts together, label them with the correct terms:

Abdomen, Antennae, Cephalothorax, Chelicerae, Legs, Thorax, Wings



## Lesson 2 – Beneficial and Harmful Spiders

### Overview:

Students will read the passage pertaining to the pros and cons of spiders. Students will have a better understanding of why spiders are important. Students will also gain an understanding about what happens with a spider bite.

### Objective:

Students will be able to recognize the spider habits and what to do in the event a spider does attack.

### TEKS:

Science: 2.1a, 2.1b, 2.2a, 2.3a, 2.3b, 2.4a, 2.4b, 2.6b, 2.8a, 2.8b, 2.9a, 2.9b

Science: 3.1a, 3.1b, 3.2a, 3.2b, 3.3a, 3.3b, 3.5a, 3.5b, 3.8a, 3.8b, 3.9a, 3.9b

### Materials:

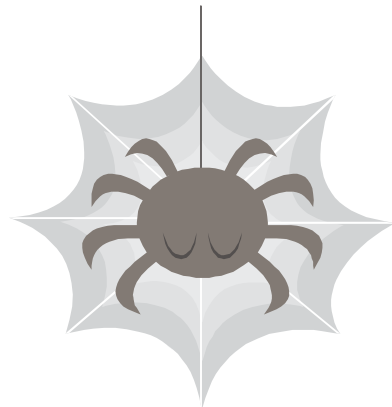
Handouts of reading exercise

Overhead copy of reading exercise

Wrap up questions for Lesson 2

Activity 2-1

Activity 2-2



## Lesson 2 – Beneficial and Harmful Spiders

### Questions to ask before reading the passage:

Do you think spiders are good or bad?

What are some bad things that you think spiders do?

What are some good things that you think spiders do?

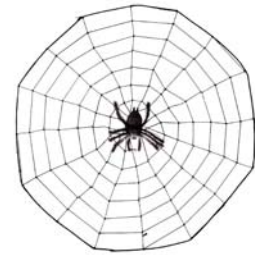
### Reading Exercise

Spiders are found all over the world and can be good or bad. Most people think spiders are bad, but spiders can be very good or beneficial!

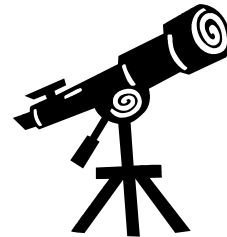
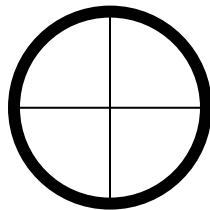
#### How are spiders beneficial?

Spiders are an important part of the food web. They are food for birds, wasps, lizards, and many other animals. Without spiders, those animals would be hungry!

Spiders love to eat insects, and this is why they are so beneficial. Without spiders eating insects there would be too many harmful insects in the world. Spiders are good to have in the garden, yard and even in the house because they eat all the bad insects.



Spiders are also good because of the silk that they spin. Spider silk is very strong and humans use it for fishing nets, lures, bags, and even cross hairs in telescopes. We also use spider cobwebs as bandages for wounds. Some people believe cobwebs and silk can clot blood and stop wounds from bleeding.



How are spiders harmful?

Spiders can be harmful because they bite. A spider bite usually feels like a bee or wasp sting. Most people will get a red spot around the spider bite. It might also swell or be itchy and hurt.

If you are bitten by a spider, tell an adult, clean the area with hydrogen peroxide or alcohol, and use an ice pack to keep it from swelling too much. If you can, collect the spider carefully! If you collect the spider you can see what type bit you and the doctor will know what type of treatment to give you.

If you are bitten by a black widow or brown recluse call or go to the doctor! Black widow bites can cause cramping in muscles. Brown recluse bites kill the skin or tissue and can leave big scars if not treated.

Poison Control Information  
1-800-222-1222

**Wrap up Questions for Lesson 2:**

Name some ways spiders can be beneficial or good. Part of the food web, eat insects, silk used for bandages, blood clotting and telescope cross hairs.

Name some ways insects can be harmful or bad. Some can bite and hurt you.

What should you do if you are bitten by a spider? Tell an adult and collect the spider carefully if you can.

## Activity 2-1: Harmful and Beneficial Spiders

Most spiders are beneficial. Only two spiders in Texas are actually harmful. Use what you learned in Lesson 2 and list ten (10) ways spiders are beneficial and five (5) ways spiders are harmful.

Spiders can be beneficial because:

1. \_\_\_\_\_  
\_\_\_\_\_

2. \_\_\_\_\_  
\_\_\_\_\_

3. \_\_\_\_\_  
\_\_\_\_\_

4. \_\_\_\_\_  
\_\_\_\_\_

5. \_\_\_\_\_  
\_\_\_\_\_

6. \_\_\_\_\_  
\_\_\_\_\_

7. \_\_\_\_\_  
\_\_\_\_\_

8. \_\_\_\_\_  
\_\_\_\_\_

9. \_\_\_\_\_  
\_\_\_\_\_

10. \_\_\_\_\_  
\_\_\_\_\_

Spiders can be harmful because:

1. \_\_\_\_\_  
\_\_\_\_\_

2. \_\_\_\_\_  
\_\_\_\_\_

3. \_\_\_\_\_  
\_\_\_\_\_

4. \_\_\_\_\_  
\_\_\_\_\_

5. \_\_\_\_\_  
\_\_\_\_\_

## Activity 2-2: Harmful and Beneficial Spider Matching Game

Get into teams of at least 4 students. Each team must cut out the pictures below. Take a piece of paper and draw a line down the middle. At the top of the page make two categories (one for each column): (1) ways spiders are beneficial and (2) ways spiders are harmful. See the example below.

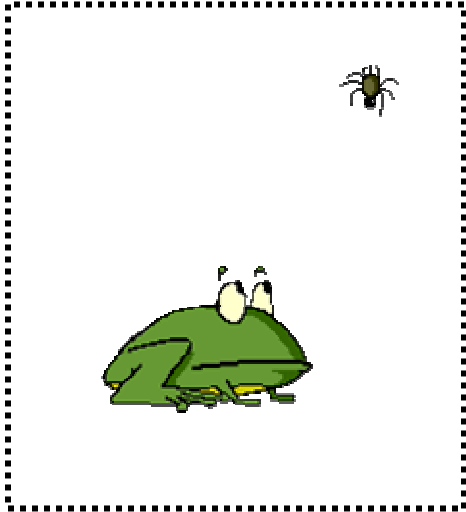
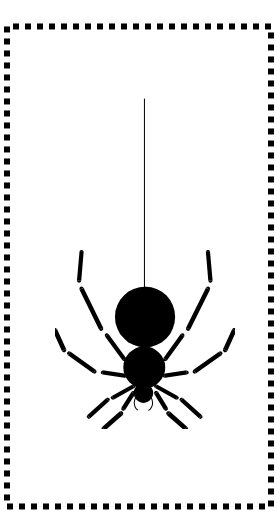
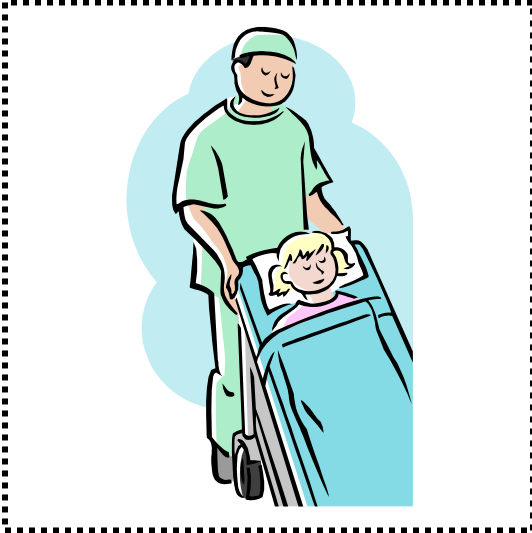
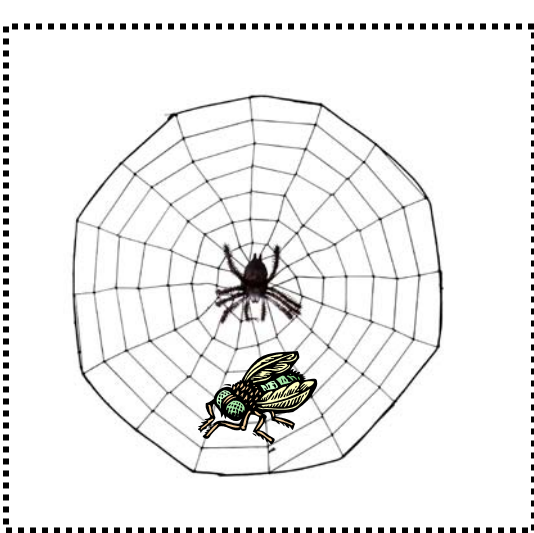
Place or glue the pictures in the category they belong. Under each picture write a sentence or two about why that picture shows how a spider is beneficial or harmful. Or match the pictures to sentences already provided by your teacher.

Now ask your teacher to come to your team and check your work. Your teacher will make sure your pictures are in the correct category. Your teacher will also ask you questions about why each picture makes spiders good or bad, so make sure you know what each picture means!

*Ways Spiders are Beneficial*

*Ways Spiders are Harmful*

Pictures for Activity 2-2



**OUCH!!!**





### Optional Narratives for Matching Game:

(To replace students developing their own sentences for each picture.)

Spider silk can be used to make bandages and to help stop cuts from bleeding.

Some spider bites only leave a little red mark, but some can make you very sick.

The silk that spiders spin can be used by humans for many different things.

Spider silk has many uses for humans. One way we use it is in telescopes to make the tiny crosshairs that let us zero in on objects in the sky.

Even if a spider is not poisonous, a bite can still hurt. But spiders only bite when they are scared.

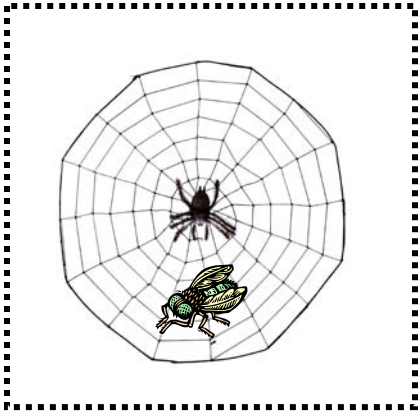
Spiders are great predators and love to eat insects that we find annoying or harmful.

Spiders are part of the food chain and are eaten by many different types of animals. Without spiders these animals wouldn't have many things to eat!

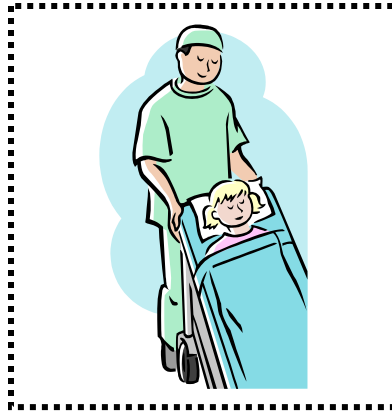
Spider silk has many uses for humans and is very strong. We use spider silk for fishing lures because it will not break easily.

Activity 2-2 Answer Key: Harmful and Beneficial Spider  
Matching Game

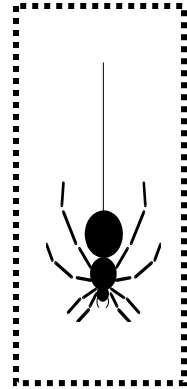
Beneficial



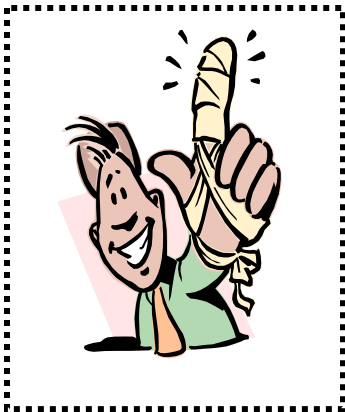
Harmful



Beneficial



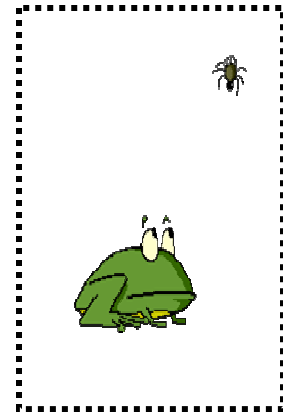
Beneficial



Beneficial



Beneficial



Harmful

**OUCH!!!**

Beneficial



## Optional Narratives for Matching Game:

(To replace students developing their own sentences for each picture.)

Spider silk can be used to make bandages and to help stop cuts from bleeding. –  
Corresponds to picture of smiling man with bandage on finger.

Some spider bites only leave a little red mark, but some can make you very sick. –  
Corresponds to picture of child in bed with doctor standing overhead

The silk that spiders spin can be used by humans for many different things. –  
Corresponds to picture of spider hanging from strand of silk

Spider silk has many uses for humans. One way we use it is in telescopes to make the tiny crosshairs that let us zero in on objects in the sky. –  
Corresponds to picture of person looking through telescope at a star

Even if a spider is not poisonous, a bite can still hurt. But spiders only bite when they are scared. –  
Corresponds to the word “OUCH!”

Spiders are great predators and love to eat insects that we find annoying or harmful. –  
Corresponds to picture of spider with fly in its web

Spiders are part of the food chain and are eaten by many different types of animals. Without spiders these animals wouldn't have many things to eat! – Corresponds to picture of frog looking at spider.

Spider silk has many uses for humans and is very strong. We use spider silk for fishing lures because it will not break easily. – Corresponds to picture of man fishing.

## Lesson 3 – Spider Lifecycles

### Overview:

Students will read the following passage in the classroom and then answer relevant questions pertaining to the passage. Students will learn about the lifecycle of spiders, where eggs are placed, and how spiderlings molt and travel.

### Instructions:

Read passage in groups or as a class.

### Objective:

Students will be able to identify the lifecycle of spiders and understand the process of molting.

### TEKS:

Science: 2.1a, 2.1b, 2.2a, 2.2b, 2.3a, 2.3b, 2.4a, 2.4b, 2.6a, 2.6b, 2.8a, 2.8b, 2.9a, 2.9b

Science: 3.1a, 3.1b, 3.2a, 3.2b, 3.3a, 3.3b, 3.5a, 3.5b, 3.8a, 3.8b, 3.9a, 3.9b

### Materials:

Handouts of reading exercise

Overhead copy of reading exercise

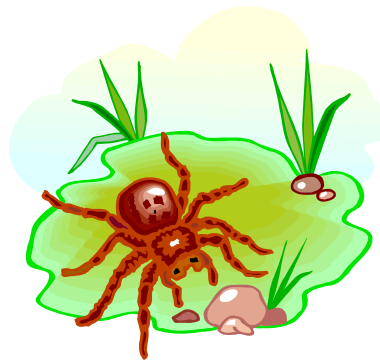
Wrap up questions for Lesson 3

Activity 3-1

Activity 3-2

Straws

String or yarn



## Lesson 3 – Spider Lifecycle

### Questions to ask before reading the passage:

Have you ever seen a spider egg?

Where do you think spiders lay their eggs?

How do you think spiders grow?

### Reading Exercise

Spiders lay eggs that will hatch into many new spiders. A mother spider spins a silk egg sac and lays her eggs in the egg sac. The mother spider may stick her egg sac to trees, walls, in dark cracks, under rocks, or in the web. Some mother spiders will carry the egg sac with her until the babies hatch.

Spider eggs will hatch in a few weeks. The baby spiders that hatch are called **spiderlings**. Spiderlings look like adults but are lighter in color.

Spiderlings that are not taken care of by the mother may travel away from her to start their lives. Some spiderlings travel by wind by **ballooning**. They spin silk and wind picks up the spider by silk and takes them to a new place!

Spiderlings have to shed their skin or **molt** to grow. Spiders have their skeletons on the outside of their body called an **exoskeleton**. Spiders cannot grow until they molt their exoskeleton. They climb out of their exoskeleton, grow a little and then the new exoskeleton hardens up.

A spider may molt 4 to 12 times before it becomes an adult! Some female spider may molt all their lives!

### Wrap up Questions for Lesson 3:

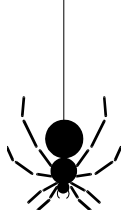
What is a baby spider called? Spiderling

What do spiders have to do to grow? Molt or shed their exoskeleton

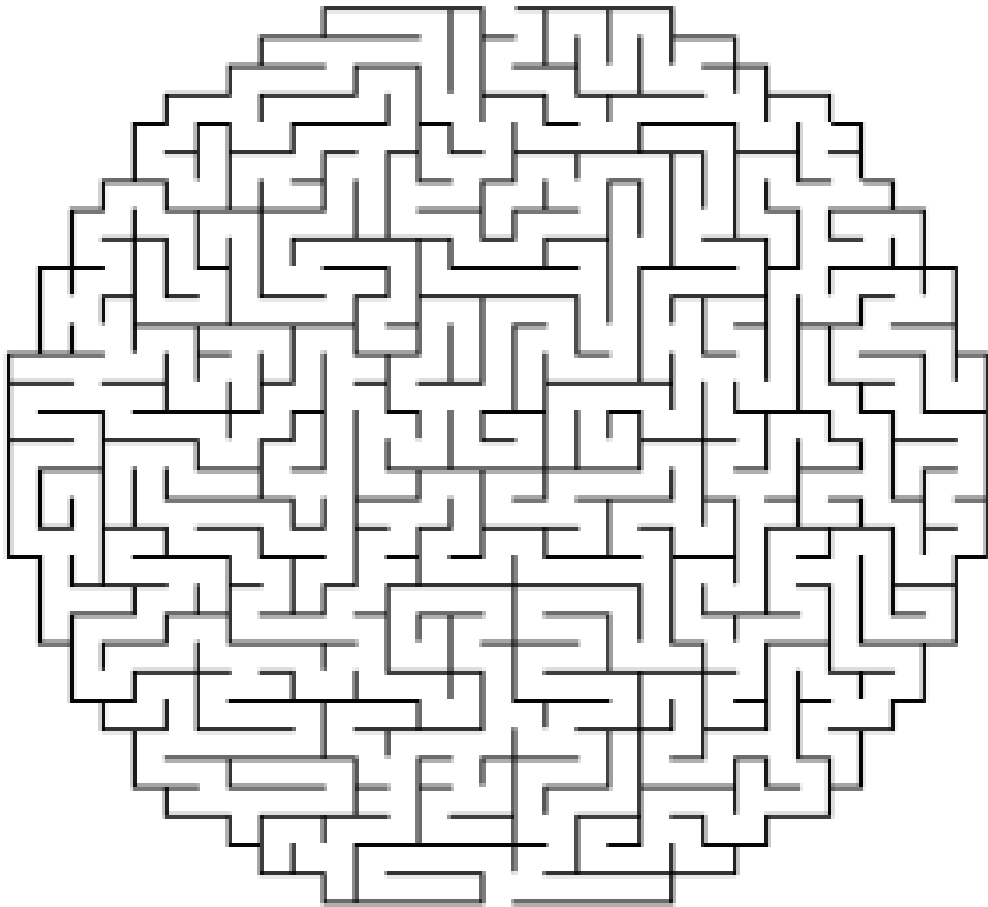
Where are some places where spiders put their eggs? On the mother's back, stuck to trees, walls, in dark cracks, under rocks, or in the web.

### Activity 3-1: Spiderling Maze

Help the spiderling balloon its way to a new home!



Start



End



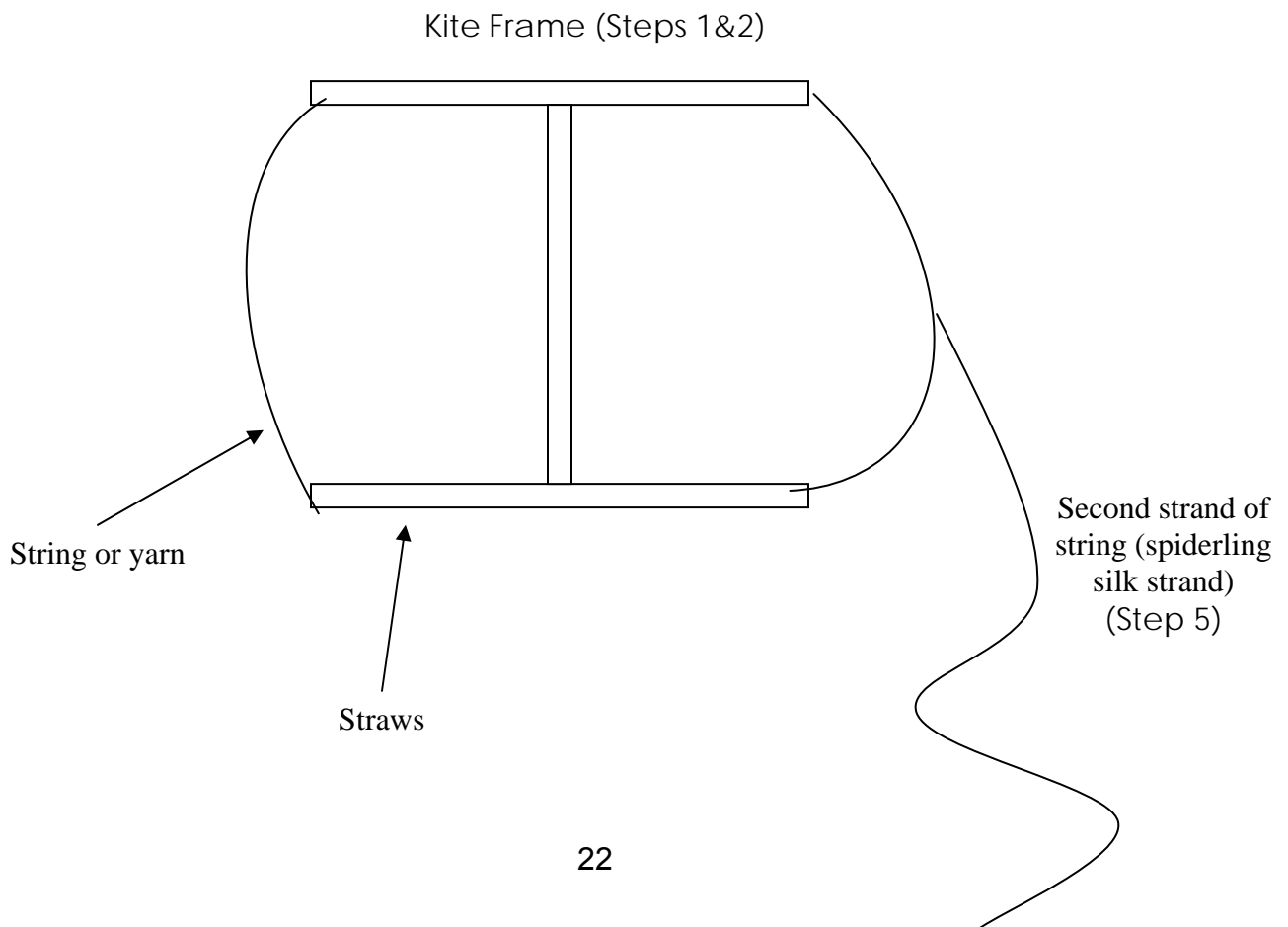
## Activity 3-2: Ballooning Spiderling Kite

### Materials:

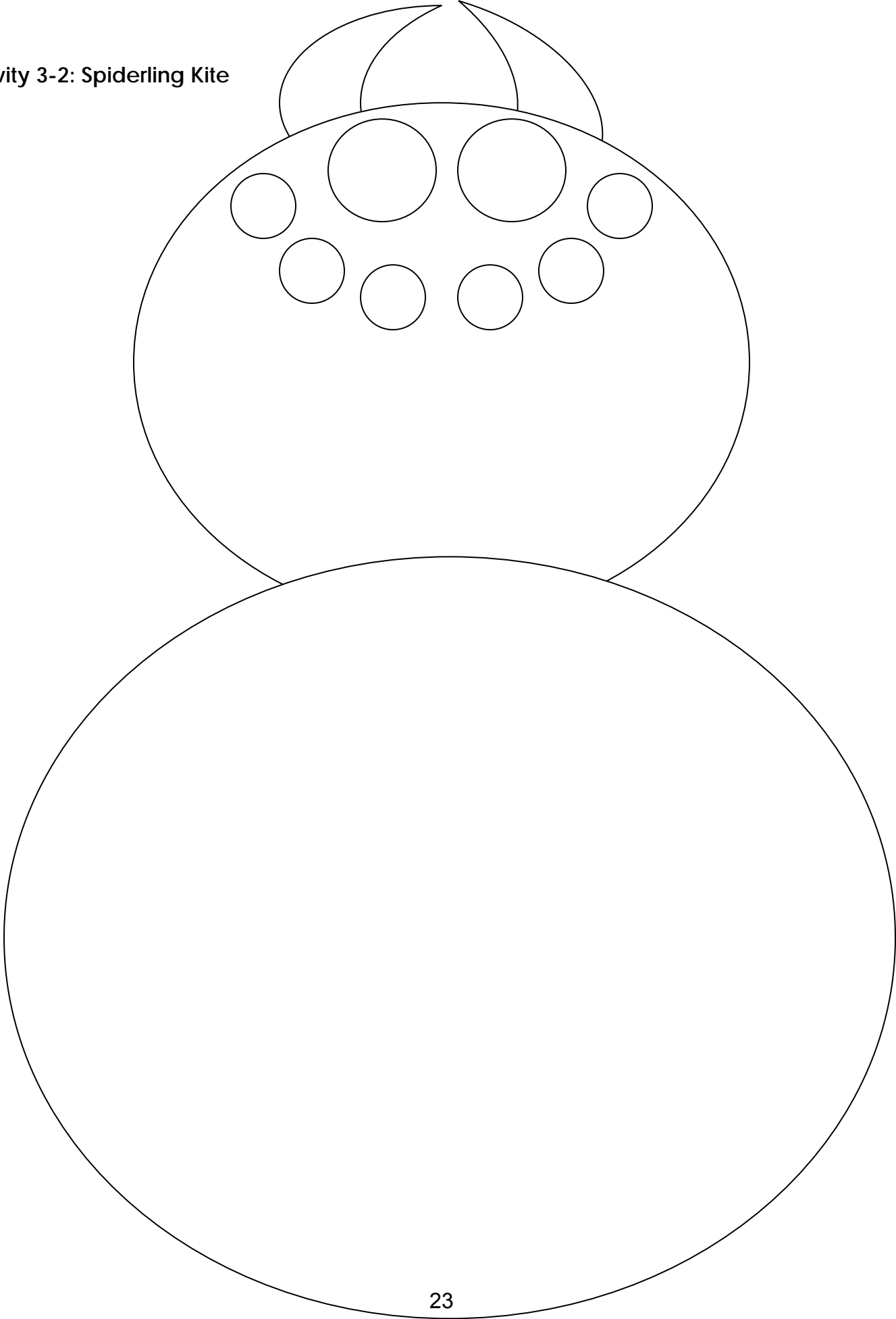
Straws (three per student)  
String or yarn  
Construction paper

### Directions:

- 1) Each student will take three straws to make the kite frame. Make a frame shaped in a capital H. Be sure your frame isn't wider or longer than the spiderling kite. Cut the center straw a little shorter than the other two.
- 2) Glue or tape the straws together to form the frame. Run a piece of string or yarn through the straws and tie the ends together.
- 3) Now cut out the spiderling kite and color it as you like. Attach the kite (spiderling) to the frame.
- 4) Cut construction paper into eight strips and fold the strips in squares of about two inches like an accordion. Tape four strips to each side of the cephalothorax of the kite. These are the spider legs.
- 5) Take a long piece of yarn or string and tie it to the string you have placed through the straws. This string is the silk strand that spiderlings use to move with the wind and it will also be what you use to fly your kite.



Activity 3-2: Spiderling Kite





## Lesson 4 – Harmful Spiders

**Overview:** Students will read the following passage in the classroom and then answer relevant questions pertaining to the passage. Students will learn the characteristics of arachnophobia and the harmful spiders: black widows and brown recluses.

**Instructions:**

Read the passage in groups or as a class.

**Objective:**

Students will be able to identify the harmful spiders black widows and brown recluses. Students will also be able to identify the characteristics of black widow and brown recluse bites and know what to do if bitten by one.

**TEKS:**

Science: 2.1a, 2.1b, 2.2a, 2.2b, 2.3a, 2.3b, 2.4a, 2.6a, 2.6b, 2.8a, 2.8b, 2.9a, 2.9b

Science: 3.1a, 3.1b, 3.2a, 3.2b, 3.3a, 3.3b, 3.5b, 3.8a, 3.8b, 3.9a, 3.9b

**Materials:**

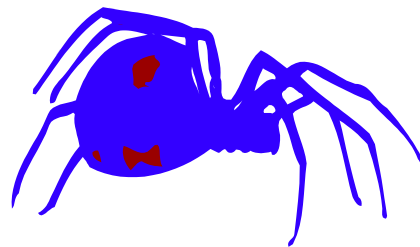
Handouts of reading exercise

Overhead copy of reading exercises A and B

Wrap up questions for Lesson 4

Activity 4-1

Activity 4-2



## Lesson 4-1 – Arachnophobia

### Questions to ask before reading the passage:

What is arachnophobia?

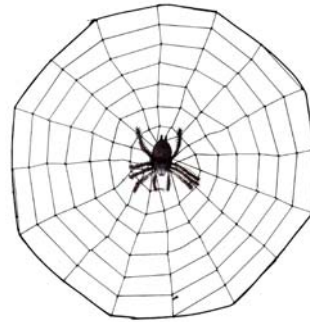
Do you know anyone who is arachnophobic?

How do spiders make them act?

### Reading Exercise A

**Arachnophobia** is the fear of spiders. People who are very afraid of spiders may be arachnophobic. There is not a reason to be scared of spiders. There are 900 types of spider in Texas, but only a few can actually hurt you.

You should be careful of black widows and brown recluses. These spiders can hurt you if they bite you.



### Wrap up Questions for Lesson 4-1:

What is arachnophobia? A fear of spiders.

Why is there no reason to be afraid of spiders? Because there are at least 900 types of spiders in Texas and only two can actually hurt you.

## Lesson 4-2 – Black Widow Spiders

### Questions to ask before reading the passage:

Have you ever seen a black widow spider?

What do black widow spiders look like?

What can a black widow spider do to you if they bite you?

### Reading Passage B

Black widows are shiny, black spiders. They have a bright red hour glass mark on the bottom of their abdomens. Black widows like to hang belly side up in their webs, so it is easy to see the hour glass. The hour glass can also be yellow or orange.

Male black widows are half the size of females and their bite cannot hurt you.

Black widow venom is called a **neurotoxin**. It affects the nervous system. The venom of black widows is actually fifteen times more deadly than a Diamondback Rattlesnake. But when a black widow bites, it can only give you a small amount of venom and it is very unlikely that you will die from the bite.

Black Widow Spider



Photo by: Dr. John Jackman, Texas A&M University

### Wrap up questions for Lesson 4-2

What do black widows look like? Shiny black with a red or orange hour glass figure on their belly.

What is the type of venom of a black widow? Neurotoxin

Even though a black widow's venom is more deadly than a rattlesnake, why can't it kill you? They only give you a small amount of venom when they bite.

## Lesson 4-3 – Brown Recluse Spiders

### Reading Exercise C

Brown recluse spiders are sometimes called “fiddleback” or violin spiders. They get these other names because they have a fiddle or violin on the back of their cephalothorax.

Brown recluses are brown or tan spiders and the fiddle is a darker brown. Brown recluse females are about the size of a quarter, including their legs. Males are a little smaller. Brown recluses have tiny hairs covering their body and only six eyes instead of eight. Both males and females are venomous.

Brown recluse spiders venom is called a **cytotoxin**. The venom causes the skin and tissue around the bite to die and make a nasty sore. After the bite you might feel burning and see a sore start to form. The sore will get larger. Some people (usually children and the elderly) will get a fever, sick to their stomach, and throw up.

Brown Recluse Spider



Photo by: Dr. John Jackman, Texas A&M University

### **Remember!**

If you are bitten by a brown recluse or black widow, call or go to the doctor. If you can, catch the spider and take it to the doctor to make sure you get the best treatment!

### **Wrap up questions for Lesson 4-3**

What do brown recluse spiders look like? Brown with a fiddle or violin shape on their back, hairs on their body and six eyes.

What is the type of venom of a brown recluse? Cytotoxin

What should you do if you are bitten by a brown recluse? Go to the doctor and try to catch the spider if you can.

## Activity 4-1: Harmful Spider Word Find

Search for the following words that characterize the harmful spiders, black widows and brown recluses.

K L B B R S L C A L R V A W H P O D M X I D V  
Z X H W S N N C Y A V I N O A J K B X I M N W  
K K O A P T S E N T B C P D I Z R C R O O Z G  
B C L B Q H F C C O O E C I R I F P E Q Q U P  
S G A D D M Q A H C Y T I W Y Y J J C Q M S Q  
A X X L X C G P L U D L O A R Y A T L M V R Z  
L C L F B K O M W J Y C O X D I H A U S E J M  
T H G I E N E L D D I F V Q I R I V S Y X P I  
U V S P H L U L U T G H C P N N V X E B P C W  
L V R C U B B X M C E G L K V I Y U I E J C T  
G S A U Z D Q N M T N B O Q O R H E G Y K E E  
O R N E U R O T O X I N O L B R O W N W W G L  
A R N M L Y F B V J H B I R K H A T B L L A Y  
S Y O X S M S N Z R F N Y E U Y F T L I Y M Z  
X H M P I T Y K M Z K U J G B O W L V O U T S  
D E I N P B X T S R C U J S N E H E O E H Q C  
B L X N I P L K E L N A X W X D N B A V N Q F  
R C S V Y M V D Y X W I R L V O H S W H X X I  
V L C U X D G Q E G H X N G M P J K B C N F H  
X Y R X E E Y L I T W G V Y K G C S R V E X A  
Q S T R G P E Z J K N N B L G E Z L I Y U W T  
Z W G C S W B J Y S I X Y M I U X S P C R L P  
X E L F L I P C B D X P U A B Z I Q P D U X I

**ARACHNOPHOBIA**

**BLACK**

**BROWN**

**CYTOTOXIN**

**EIGHT**

**EYES**

**FIDDLE**

**GLASS**

**HAIRY**

**HOOR**

**NEUROTOXIN**

**RECLUSE**

**RED**

**SHINY**

**SIX**

**VENOM**

**VIOLIN**

**WIDOW**

## Activity 4.2: Spider Matching Game

Group into teams as directed by your teacher. Cut out the following title cards and clue cards. Place the clue cards face down. The clue cards are characteristics of the two spiders on the title cards. When you are instructed by your teacher, flip over the clue cards and place them under the title card of the spider they best describe. Each spider will have eight (8) clue cards. The first team to match all the clue cards to the correct spider is the winner!

### Title Cards

**Black Widow  
Spider**

**Brown Recluse  
Spider**

### Clue Cards

**SHINY**

**BLACK**

**BROWN**

**CYTOTOXIN**

**HAIRY**

**SMOOTH**

Clue Cards Continued...

SIZE OF A  
QUARTER

FIDDLE

NEUROTOXIN

BITE MAKES  
A BAD SORE

RED HOUR  
GLASS

6 EYES

8 EYES

HANGS  
UPSIDE DOWN  
IN WEB

ONLY  
FEMALES ARE  
HARMFUL

MALES AND  
FEMALES ARE  
HARMFUL

## Activity 4-2: Answer Key

### Black Widow Spider

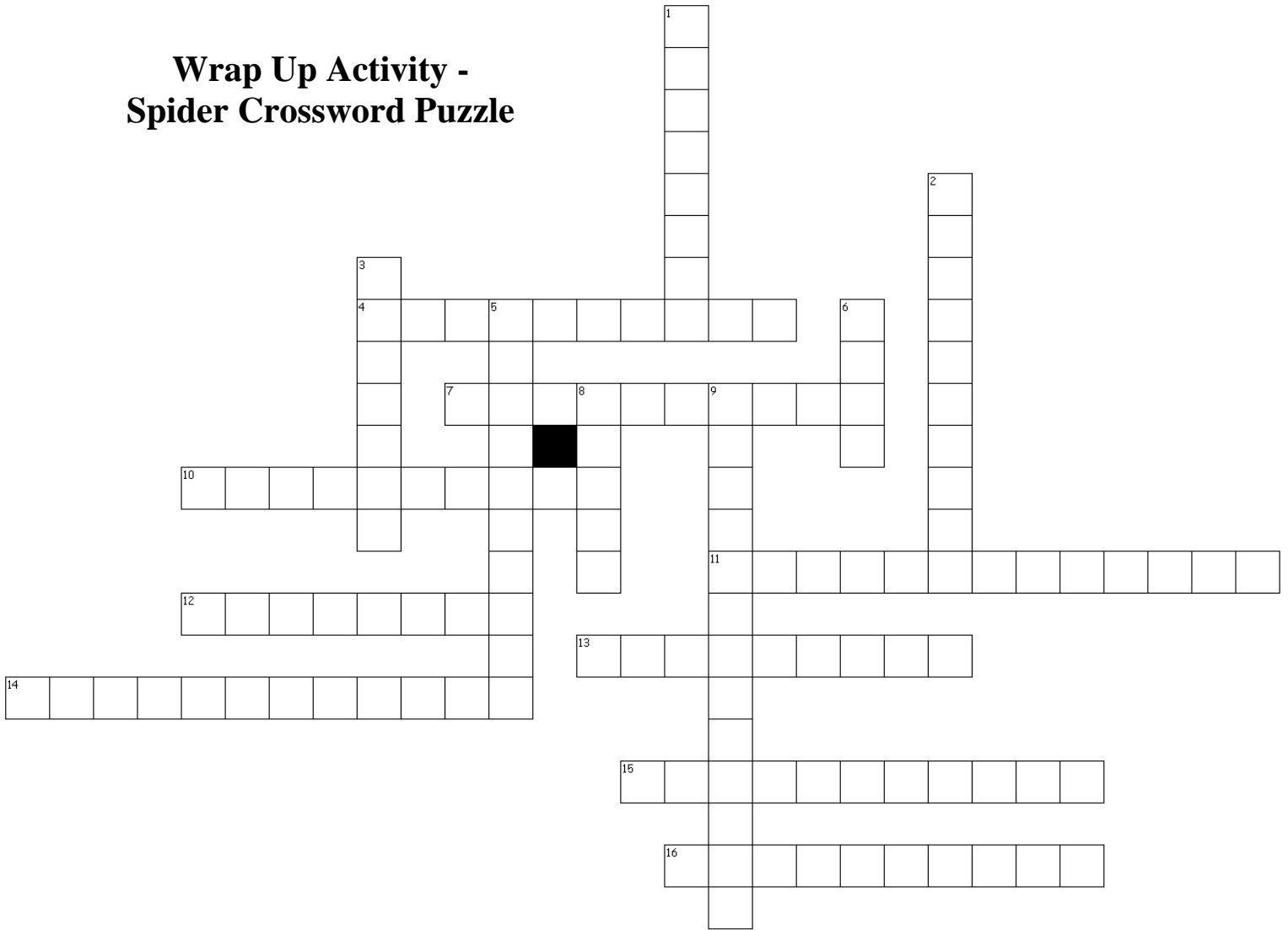
1. Shiny
2. Black
3. Red hour glass
4. Neurotoxin
5. Smooth
6. 8 eyes
7. Hang upside down in web
8. Only females are harmful

### Brown Recluse Spider

1. Brown
2. Fiddle
3. Hairy
4. Cytotoxin
5. Size of a quarter
6. 6 eyes
7. Bite makes a bad sore
8. Males and females are harmful



# Wrap Up Activity - Spider Crossword Puzzle



## Across

- 4. A harmful, shiny, black spider with a red hour glass on the abdomen
- 7. Most spiders are not harmful, they are \_\_\_\_\_
- 10. A baby spider
- 11. The fear of spiders
- 12. An animal that eats prey, what all spiders are
- 13. The type of venom of a brown recluse
- 14. A harmful brown spider with a fiddle on the cephalothorax
- 15. Outside covering of a spider
- 16. How spiderlings travel by wind

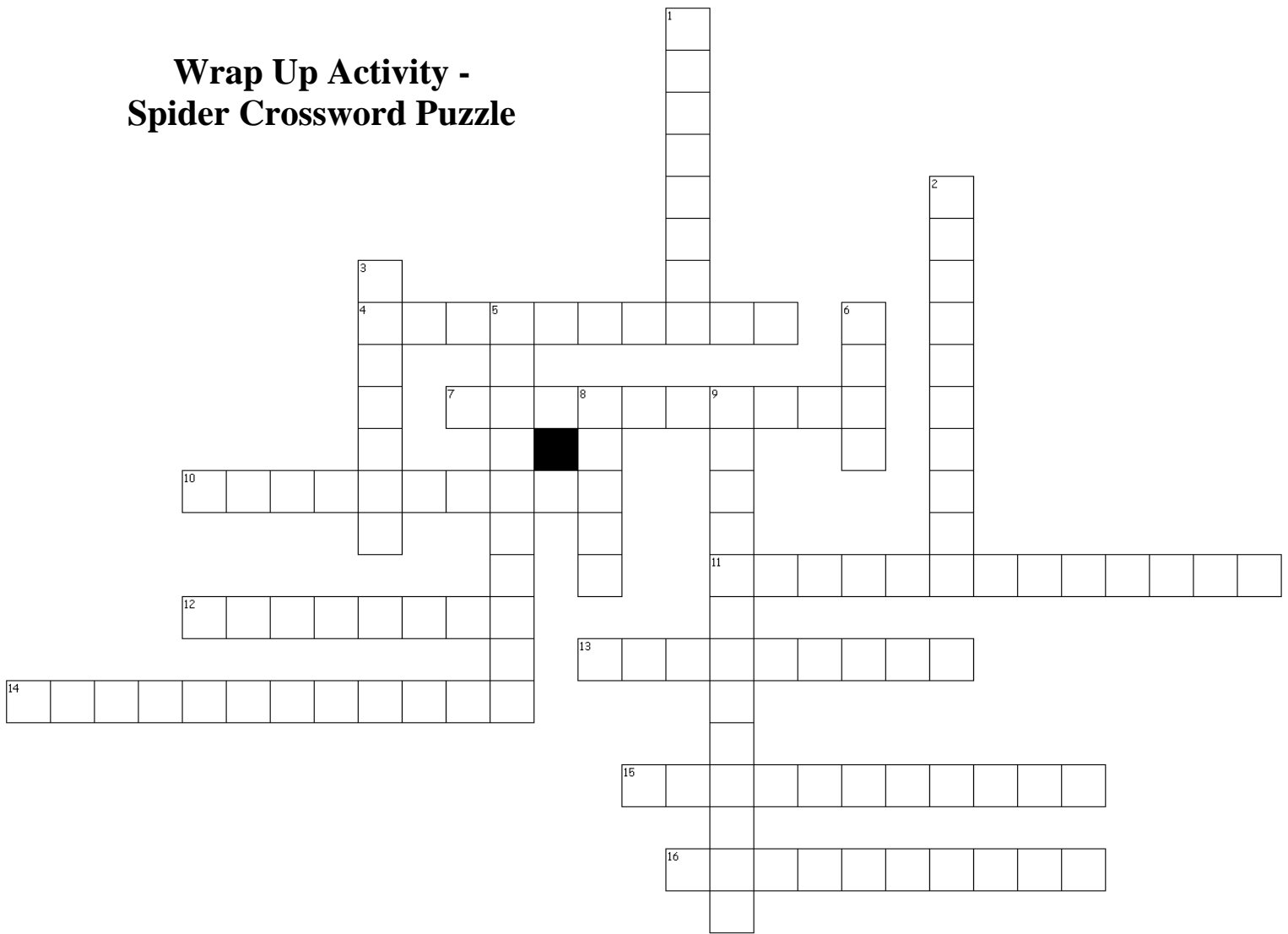
## Down

- 1. An arthropod with eight legs and two body parts
- 2. The type of venom of a black widow spider
- 3. The second body part of a spider
- 5. Where the fangs of a spider are found
- 6. Shedding the exoskeleton
- 8. The number of legs of a spider
- 9. The first body part of a spider

## Word Bank

- Arachnid
- Arachnophobia
- Abdomen
- Ballooning
- Spiderling
- Cephalothorax
- Eight
- Cytotoxin
- Molt
- Exoskeleton
- Chelicerae
- Beneficial
- Black widow
- Neurotoxin
- Brown recluse
- Predator

## Wrap Up Activity - Spider Crossword Puzzle



### Across

4. A harmful, shiny, black spider with a red hour glass on the abdomen – **Black widow**
7. Most spiders are not harmful, they are **\_beneficial\_**
10. A baby spider - **spiderling**
11. The fear of spiders - **arachnophobia**
12. An animal that eats prey, what all spiders are - **predator**
13. The type of venom of a brown recluse - **cytotoxin**
14. A harmful brown spider with a fiddle on the cephalothorax – **brown recluse**
15. Outside covering of a spider - **exoskeleton**
16. How spiderlings travel by wind - **ballooning**

### Down

1. An arthropod with eight legs and two body parts - **arachnid**
2. The type of venom of a black widow spider - **neurotoxin**
3. The second body part of a spider - **abdomen**
5. Where the fangs of a spider are found - **chelicerae**
6. Shedding the exoskeleton - **molt**
8. The number of legs of a spider - **eight**
9. The first body part of a spider - **cephalothorax**

## Wrap Up Activity: Spider Word Search

A I E P M M R U R X P M N K I C L S M B P R N O S  
M P K A J D Z N D Q J X I R Y F F Y I H I E U E U  
Y W P Y R M O Y A B H K X T R C U L A Y A D R Y Q  
E S U L C E R N W O R B O D I N H C A R A I E Z C  
E W L J P B C P Q P T T T L Q H W A A S Y P N O U  
E V N R K M O I Z L O R O E T Q Y C G Z N S W E C  
Q S W E P G J V L X Z M R W B O H J R H A N S F E  
N M Q A M M T S I E J B U P Q N B J T K V H D F P  
S U A K T O E N U U H A E H O U A W S A N F J Y H  
H N T E X I D S L Z M C N P I R L Z M P N D K U A  
C W W T M H G B W S D F H O T T L P D D L F O H L  
B I S V V Z V F A M Y O K P N P O S C S E N B C O  
N D R A N H C I H D B G B N H N O I V L F F P Y T  
L I Z W M D G D U I L B D Z B G N T Q U F O I P H  
F P N O D Z G U A A S M W W L Z I D C V U Y C T O  
P D Z D P X N A I U B P S B P R N B V Q W N F E R  
M H P J D A I C N V U P I V S M G M C F G M K O A  
B L A C K W I D O W L S W D G N N L O Q G M E T X  
H K M Y L F S L T A J J S K E G H F O H A R E P Y  
T R A H E E G W P W D S D S Z R B P F I W O D E R  
R N E N L Y B S R D J N H G D B L J L S X J D V L  
K E E O Y D P R P G I F Z E I C Z I V Y D L T J N  
Q B Q P B L Z L E I U X T E U P N J N M O L T Z X  
L N B Q R V K S I L F O Y G Y Z Y Q W G G J A Z J  
X X E U E Y P A G Q H Z I S E C X K B Z Y K B H J

### Word Bank

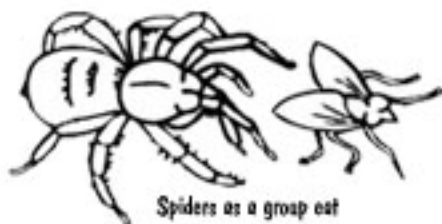
ABDOMEN  
ARACHNID  
ARACHNOPHOBIA  
BALLOONING  
BENEFICIAL  
BLACKWIDOW  
BROWNRECLUSE  
CEPHALOTHORAX

CHELICERAE  
CYTOTOXIN  
MOLT  
NEUROTOXIN  
PALPS  
SPIDER  
SPIDERLING

# Spiders: Spooky or Cool?



Spider silk is the strongest natural fiber known—stronger than steel of equal weight!



Spiders as a group eat more insects than birds.



A few cultures are known to eat tarantulas



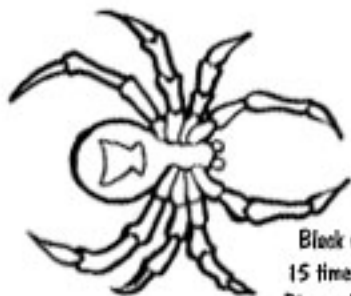
Trap door spiders have spines on their jaws that allow them to dig burrows in the ground.



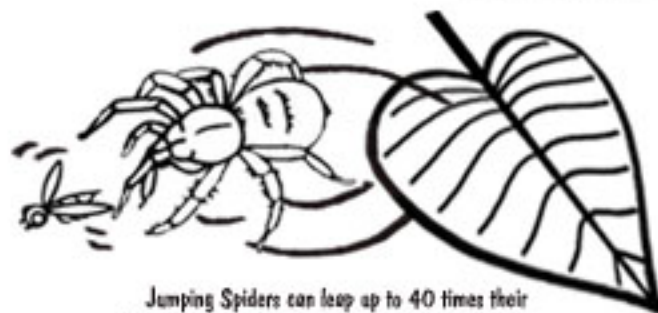
Crab spiders can change color to match their habitats.

## More Spider Facts:

- Spider blood is pale blue.
- Spiders are thought to have existed for over 300 million years.
- The garden spider eats its own web and makes a new one every day.
- World's largest spider is the Goliath bird-eating spider of South America. Its body length is about 4" long and leg span up to 10", about the size of a frisbee.
- World's smallest spider is the Samoan moss spider at about 1/100th of an inch or the size of a pin head.



Black widow venom is 15 times deadlier than a Diamondback Rattlesnake.



Jumping Spiders can leap up to 40 times their body length. Best vision of all spiders with 8 eyes.

## Glossary Terms

**Arachnid** (Lesson 1) – an arthropod with two body parts (cephalothorax and abdomen), eight legs, no antennae and no wings. Spiders, scorpions, mites and ticks are all arachnids.

**Arachnophobia** (Lesson 4) – An irrational fear of spiders.

**Abdomen** (Lesson 1) – The second and last body part of an arachnid. The third and last body part of an insect.

**Ballooning** (Lesson 3) – A process spiderlings perform in order to travel from one place to another. Spiderlings spin a single silk strand and allow the wind to blow them to new sites.

**Cephalothorax** (Lesson 1) – The first body part of an arachnid where the legs, eyes, and mouthparts are found.

**Chelicerae** (Lesson 1) – Part of the mouthparts of spiders that contain the fangs.

**Cytotoxin** (Lesson 4) – The type of toxin found in brown recluse venom. Causes live tissue to die.

**Exoskeleton** (Lesson 3) – The skeleton or supporting structure on the outside of an insect.

**Molt** (Lesson 3) – A process spiders must go through in order to grow. Shedding of the exoskeleton.

**Neurotoxin** (Lesson 4) – The type of toxin found in black widow spiders. Affects the nervous system of the body.

**Palps** (Lesson 1) – Mouthparts on arthropods that are used as sensory structures.

**Predator** (Lesson 1) – An animal that consumes prey.

**Spiderling** (Lesson 3) – An immature spider.

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