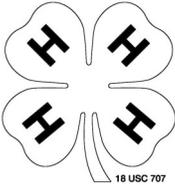
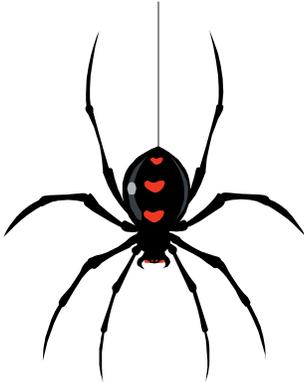
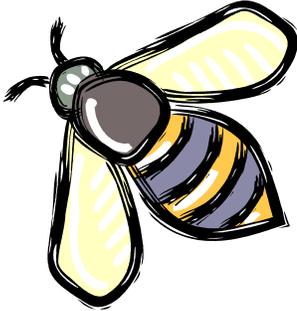


# Tippecanoe County Mini 4-H



We would like to thank Elkart County 4-H & Karla Smith, Program Assistant-Purdue Extension Hendricks County for sharing their work with us. Most of the content of this manual was taken from these two sources.



# 4-H Facts



**The 4-H Symbol: A four leaf clover with an “H” in each leaf.**

**4-H Colors: Green and White**

**The 4-H Motto: To make the best better!**

**The 4-H Pledge:**

**I Pledge**

**My Head to clearer thinking**

**My Heart to greater loyalty**

**My Hands to larger service**

**My Health to better living**

**For my Club,**

**My Community,**



# Mini 4-H Parent's Page



We welcome you and your child to the Mini 4-H program. Mini 4-H is for children in kindergarten, first and second grades during the current 4-H year. Mini 4-H is designed to supplement and introduce Mini 4-H to the Tippecanoe County 4-H program.

As a Mini 4-H parent, your job is to guide your child through the activities. It is suggested that you do not complete the activities for them. Instead, help them, guide them, work with them, and let them do all that they possibly can. Learning by doing is the best educational tool that we can provide for our youth.

Additionally, the Mini 4-H program is set up to allow your child to exhibit a project at the 4-H Fair. This project is based on information within this manual. The 4-H Fair is an exciting time for 4-H members and families. It is a week that allows community youth to showcase their talents, interests and enthusiasm for learning.

Mini 4-H is fun! Your child will certainly enjoy it. You can have fun too, by guiding and helping as your child participates in the program. Encourage and praise your child as he/she has fun learning and sharing with you.

## Bugs Rules

Please refer to handbook for complete general rule requirements. Bug project specific rules are as follows:

- Kindergarten: Complete one activity in the Mini 4-H Bugs Project Manual and display a 12" X 12" poster on one insect that may be beneficial and one insect that may do harm.
- First Grade: Complete two activities in the Mini 4-H Bugs Project and draw a symmetrical picture of a butterfly labeling the basic parts. This is demonstrated in the manual.
- Second Grade: Complete three activities in the Mini 4-H Bugs Project and display an insect, preserved and pinned properly on a 12" X 12" poster. Place a picture of the insect next to the specimen and label the body parts on the picture.

# Bug Information and Resources

Bugs! Bugs! They are everywhere! Did you know there are more types of bugs and insects than any other animal life? You can watch and learn about bugs anywhere. They live in water and in the soil. They live in cold, warm and hot places. Bugs live in wet and dry places. They live in bright and dark places. Some bugs are outside, but some might be in your house. There are bugs that have a lot of color and are easy to see. Other bugs are very hard to see. Some bugs make noises, and some bugs are very quiet.

Most bugs are **insects**. An insect has 3 body parts and 6 legs. Spiders are not insects. They have 2 body parts and 8 legs. You will learn more about bugs and observe bugs that live near you. This project will help you learn to read and follow directions, choose an activity, be neat, and have fun.

---

## Purdue Website for Entomology

The website has a lot of information including how to properly preserve and pin insects.

<https://extension.entm.purdue.edu/401Book/default.php?page=home>

## Books to learn about Bugs

*A New Butterfly: My First Look at Metamorphosis* (Kids Can Pr. 1997) by Pamela Hickman, is a story about the life cycle of a butterfly as seen through the eyes of a young girl. This book contains a section with extended information and suggestions for related activities.

*Bugs for Lunch* (Charlesbridge Publishing, 1999) by Margery Facklam, is a rhyming book about bug-eating animals. There is a section at the back of the book that provides additional information on each bug-eater.

*I'd Like to Be an Entomologist: Learning About Insects, Spiders and Other Arthropods* (Twin Sisters Productions, 1996) by Kim M. Thompson, is a book and audio cassette combination that answers many questions about bugs through song. This set also introduces children to Dr. Randy Mitchell, an entomologist.

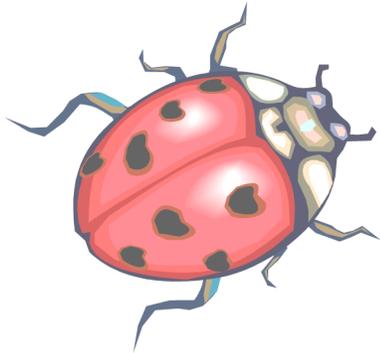
*Insectigations: 40 Hands-on Activities to Explore the Insect World* (Chicago Review Press, 2005) by Cindy Blobaum, offers really thoughtful activities to challenge young explorers. Excellent pictures/illustrations

*Janice VanCleave's Play and Find Out About Bugs: Easy Experiments for Young Children* (John Wiley & Sons, 1999) by Janice Pratt VanCleave, contains 50 simple experiments that help children discover information about bugs.

*The Big Bug Book* (Little Brown & Co., 1998) by Margery Facklam, introduces big bugs to young audiences. The illustrations help children understand the size of the bug by picturing the bug with objects familiar to the child.

*The Butterfly Alphabet Book* (Charlesbridge Publishing, 1995) by Brian Cassie and Jerry Pallotta, is a book filled with pictures and descriptions of butterflies

# Basic Bug Identification



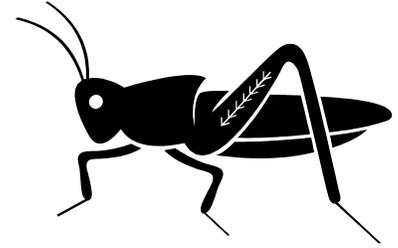
**LADYBUG**

Ladybugs protect crops by eating plant-eating insects such as aphids.



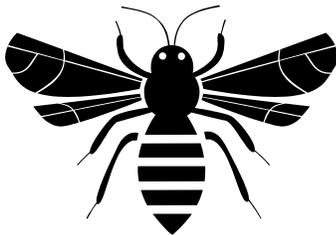
**SPIDER**

Some spiders build web communities where up to 50,000 spiders can live.



**GRASSHOPPER**

An adult grasshopper can leap 10 times its length.



**BEE**

Bees help plants grow by spreading the pollen around to other plants.



**ANT**

Ant colonies have one queen who lays thousands of eggs.



**STAG BEETLE**

The large antlers on a stag beetle are really mandibles, which are its jaws.

<https://extension.entm.purdue.edu/401Book/default.php?page=home>

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# Bug Activities

## Before you get started:

- Pick the activities you wish to complete.
  - Read the directions carefully.
- Make sure you have all of the needed materials.
- Clean up your work area and put your supplies away when you are finished.
- Complete the Mini 4-H manual pages for the activities you chose and the record sheet.
  - Complete your exhibit project.
    - Have fun!





## ACTIVITY 1 – WHAT MAKES AN INSECT?

### Materials needed for this activity:

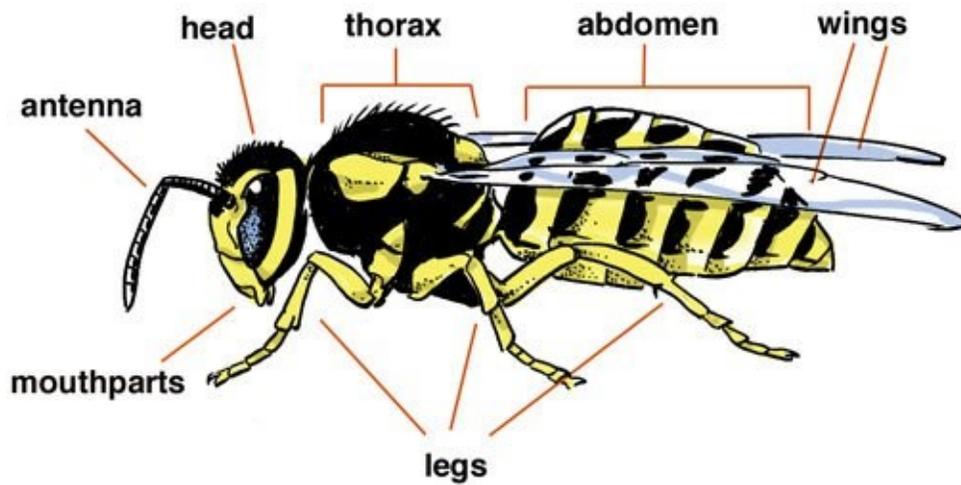
Insect Body Parts Activity Pages 1 & 2, Scissors, Stapler and Crayons or markers

### What you will do:

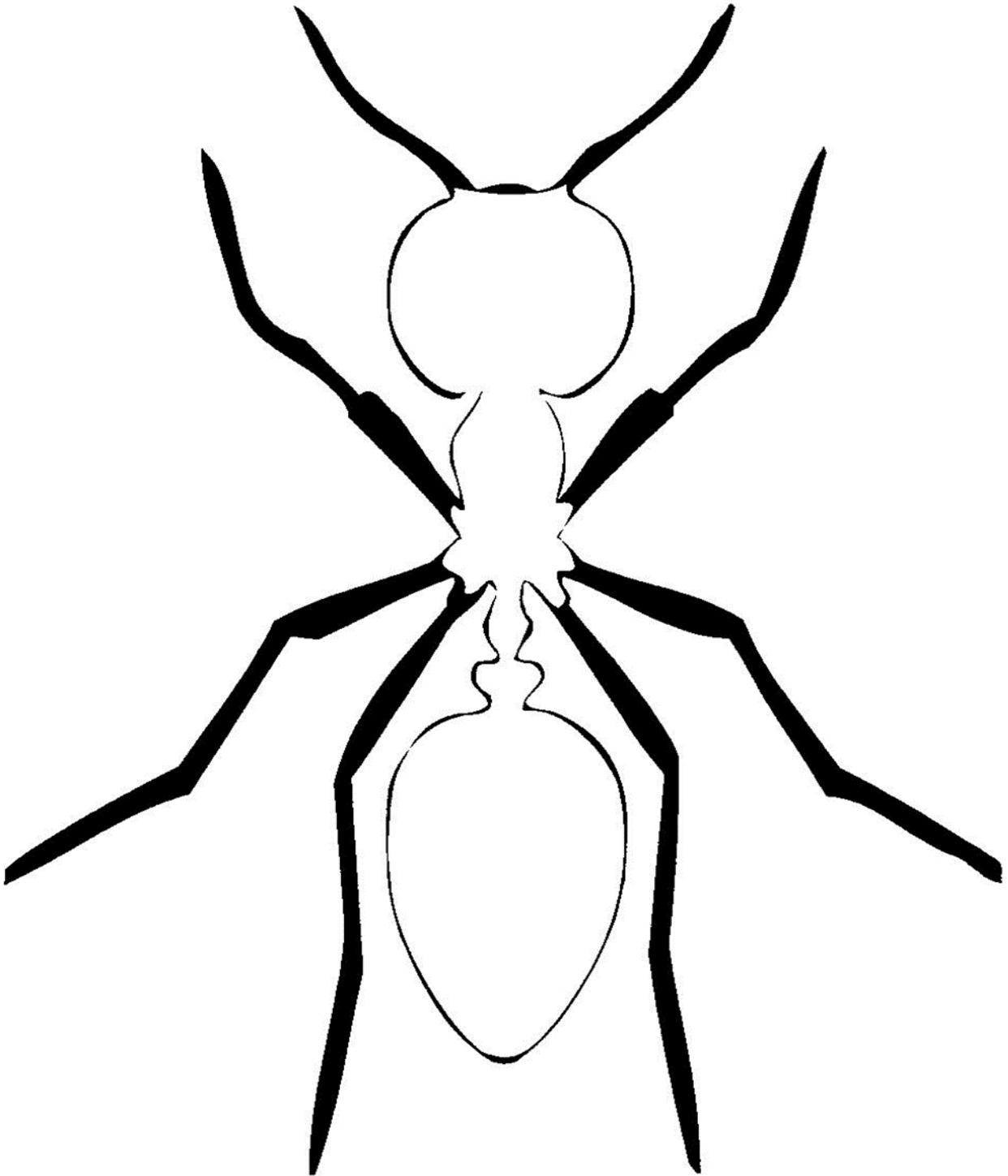
1. Color the insect on the Insect Body Parts Activity Page 1.
2. Cut along the dotted lines on Insect Body Parts Activity Page 2.
3. Lay the Insect Body Parts Activity Page 2 on top of the Insect Body Parts Activity Page.1
4. Staple where you see this symbol: ▲
5. Fold back each flap, one at a time, to make a door so you can see the part of the insect the word on the flap is naming.

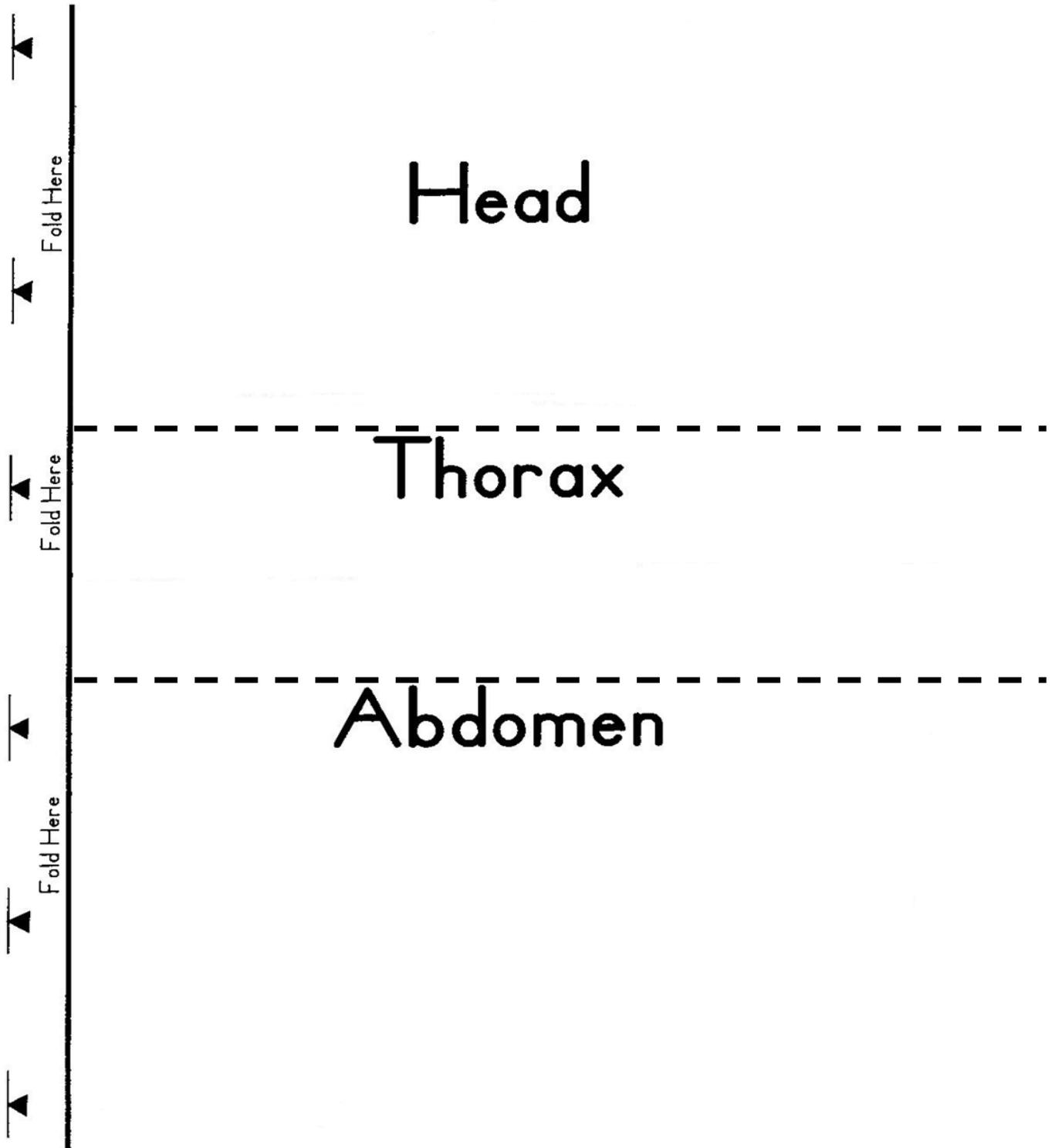
### Stretchers

1. Encourage children to compare their own body parts to the body parts of an insect. Compare the number of legs, where the legs are attached, etc.
2. Encourage children to scurry like a spider, float like a butterfly, and leap like a grasshopper. How many more ways can you think of that bugs move?
3. Using the tune of “Head, Shoulders, Knees and Toes,” sing the words, “Head, Thorax, Abdomen and Legs. Head, thorax, abdomen and legs. Head, thorax, abdomen and legs. Insects are our friends.” Be sure to point to each body part as you sing it.



**Insect Body Parts Activity Page 1**







## ACTIVITY 2 – SPIDERS ARE NOT INSECTS

What about spiders? Are spiders insects? In Activity 1 we learned that insects have 6 legs and 3 body parts. Spiders are not insects because they have 8 legs and 2 body parts. The first body part of an insect is the head and the second body part is the thorax. The head of an insect and the thorax of an insect are two different body parts. But the head and the thorax of a spider are made together and are only one body part. This body part is called the **cephalothorax** (SEF-ah-low-thor-ax). The legs of a spider are attached at the cephalothorax. The abdomen of the spider has **spinnerets** and the part that lays the eggs. The spinnerets have tubes in them. Spiders make webs from the silky fiber that comes out of the spinnerets.

### Materials needed for this activity:

Spider Parts Activity Pages 1 & 2, Scissors, Stapler & Crayons or markers

### What you will do:

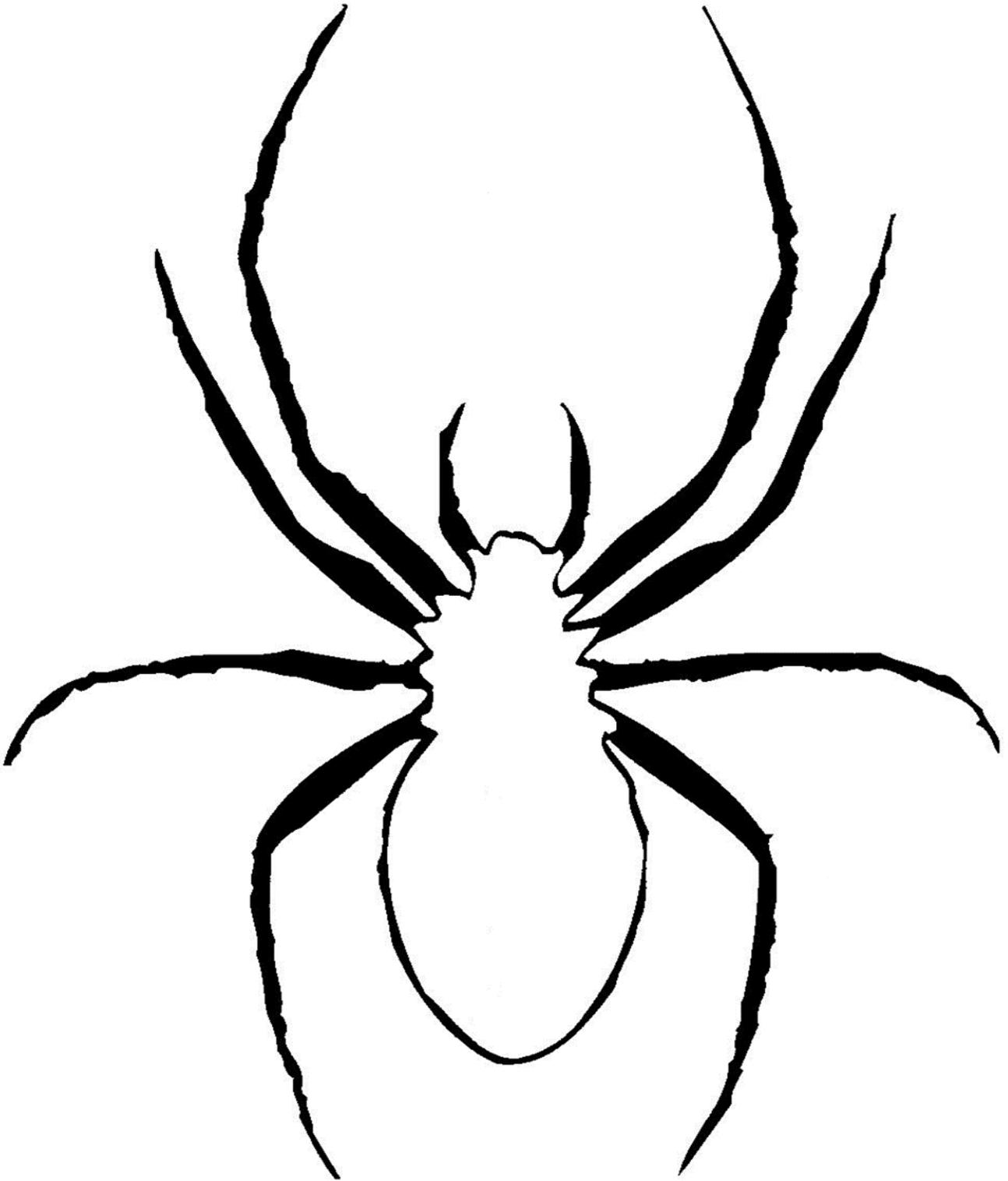
1. Color the spider on the Spider Parts Activity Page 1.
2. Cut along the dotted lines on Spider Parts Activity Page 2.
3. Lay the Spider Parts Activity Page 2 on top of the Spider Body Parts Activity Page 1.
4. Staple where you see this symbol: ▲
5. Fold back each flap, one at a time, to make a door so you can see the part of the spider the word on the flap is naming.

### Stretchers

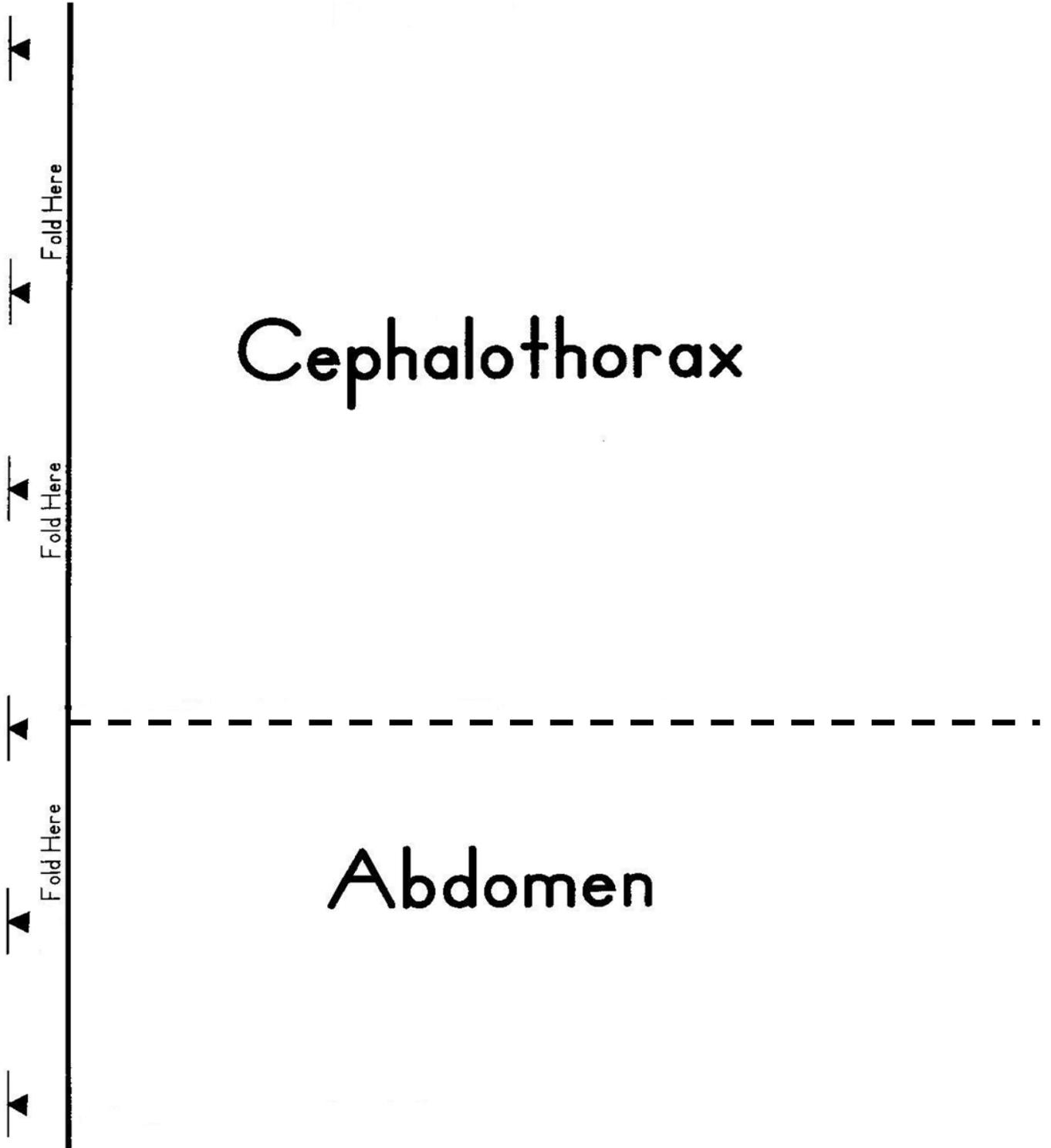
1. Create math problems using insects and spiders. For example, ask how many legs there would be if you caught 3 insects and 1 spider. The answer is 26 legs. Insect legs = 18 (3 x 6) plus 8 spider legs.



# Spider Parts Activity Page



# Spider Parts Activity Page





## ACTIVITY 3 – INSECT OR SPIDER GAME

### **Materials needed for this activity:**

Insect or Spider Activity Page 1 & 2, Scissors, Paper lunch bag, Insect or Spider Graph & Crayons or markers

### **What you will do:**

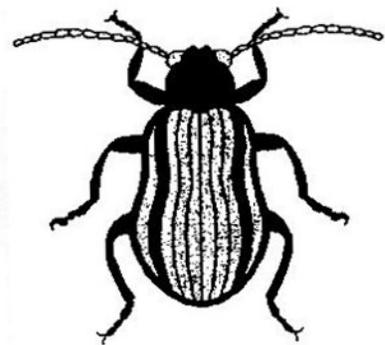
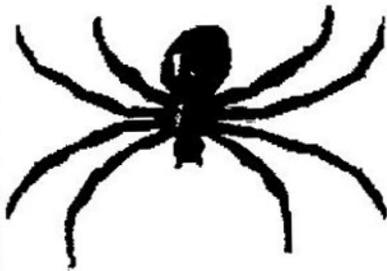
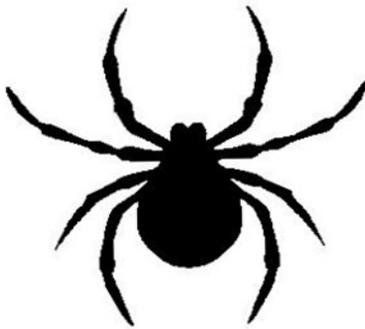
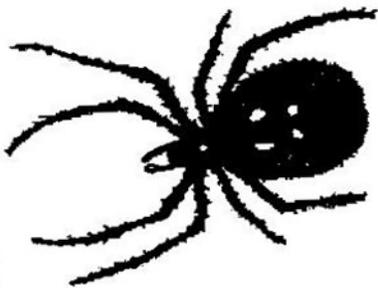
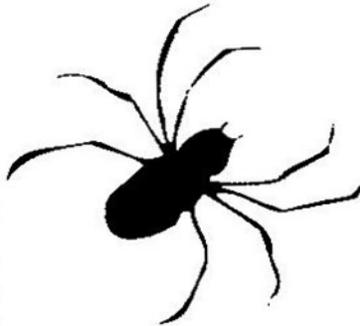
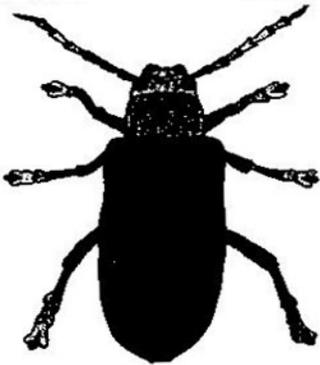
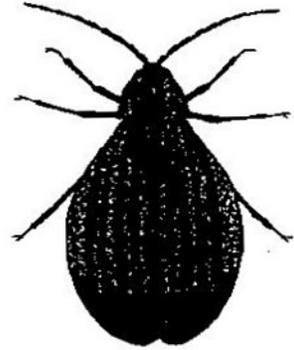
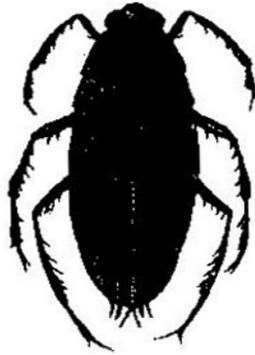
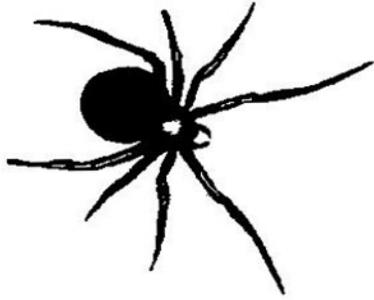
1. Cut out the squares on the dotted lines to makes cards.
2. Place the cards in a paper lunch bag and shake to mix them up.
3. Draw out one of the cards. If the card shows a picture of an insect or if the words describe an insect, color in the bottom square of the graph right above the insect. If the card shows a picture of a spider or if the words describe a spider, color in the bottom square of the graph right above the spider.
4. Choose again and color in the square that shows what you picked. Choose a total of eight times. Did you choose more insect cards or more spider cards? (This game can be played with partners and in a group of three. Each child takes a turn drawing cards until one person has either filled up one side of the graph or until the group has run out of cards.)

### **Stretchers**

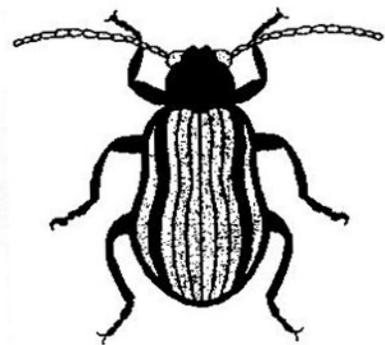
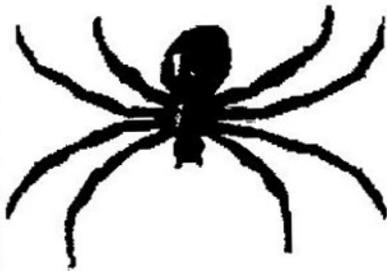
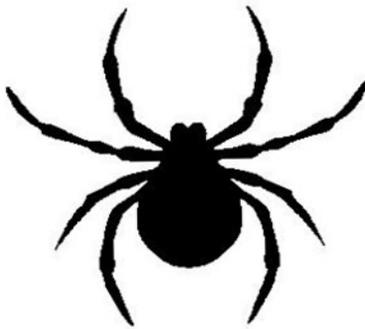
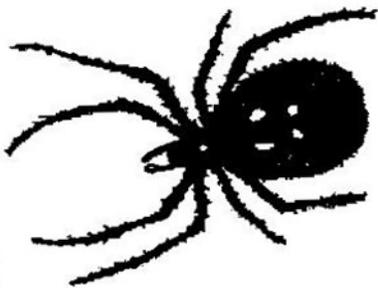
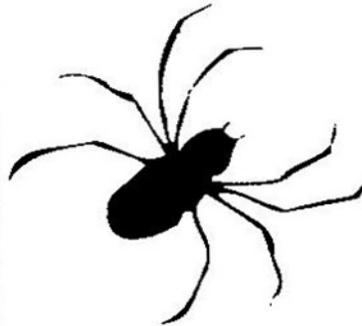
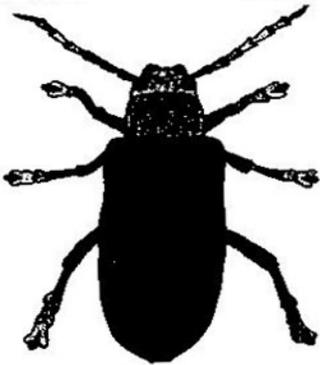
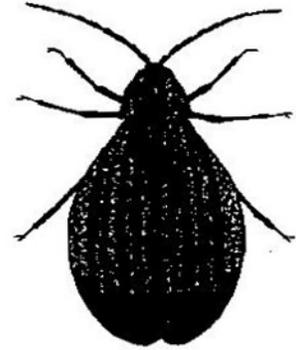
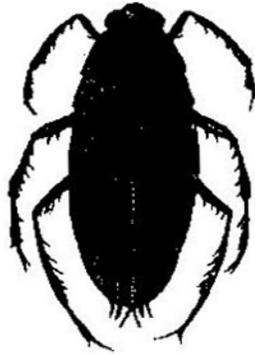
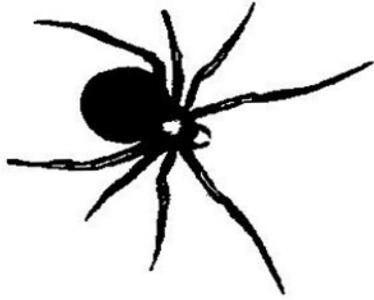
1. A memory game can be played with the cards. Glue the cards onto the same color of construction paper so you cannot see through the backs. Mix up all the cards and lay them face down in rows. Turn over any 2 cards. If both cards are insects or words about insects, keep them and the next person takes their turn. If both cards are about spiders or words about spiders, keep them and the next person takes their turn. If both cards do not refer to the same thing (either an insect or a spider), you must put the cards back face down and the next person takes their turn. The game ends when all the cards are matched.



Insect or Spider Activity Page 1



Insect or Spider Activity Page 2



**8**

**8**

**7**

**7**

**6**

**6**

**5**

**5**

**4**

**4**

**3**

**3**

**2**

**2**

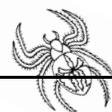
**1**

**1**

**Insect**



**Spider**



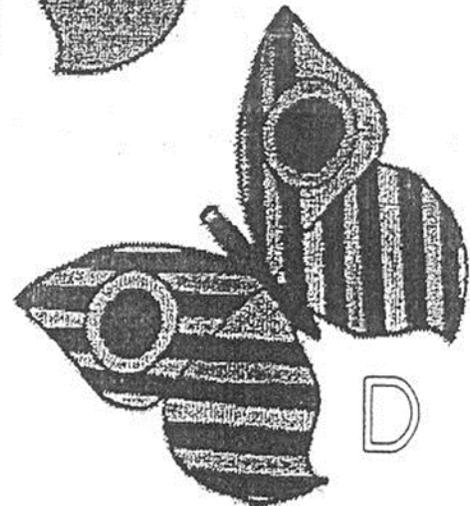
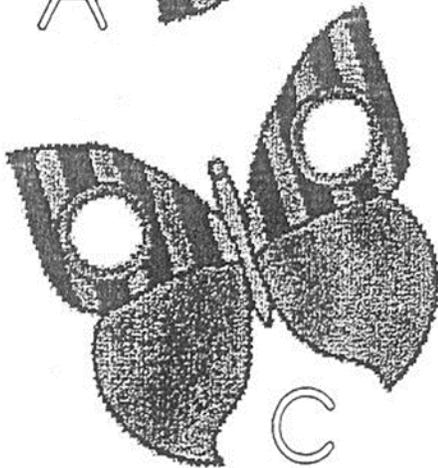
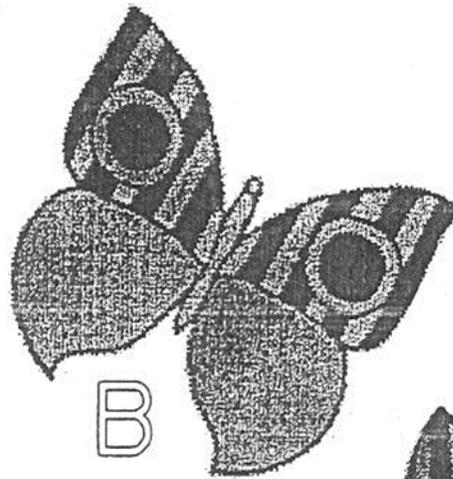
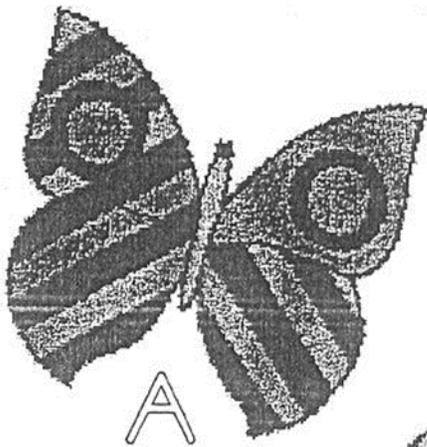


## ACTIVITY 4 – BOTH SIDES ARE THE SAME

Have you ever looked closely at a bug? Most bugs are the same on both sides. When a bug has 2 wings on the right side, it usually has 2 wings on the left side, too. Things that are the same on both sides are **symmetrical**. Take a minute to look around. Can you find things around you that are symmetrical? Are animals symmetrical? What about you and your friends?

Why do you think bugs are symmetrical? What might happen if a bug had 3 long legs on one side and 3 short legs on the other side? Get an adult to help you find out. First, make one small wheel and one large wheel out of cardboard. Use a pencil or straw as an axle to connect the 2 wheels. What happens when you try to roll the wheels? What might happen if a bug had 1 wing on one side and no wings on the other side? (*Hint: Take one of the wheels off and try to roll only one wheel and an axle.*)

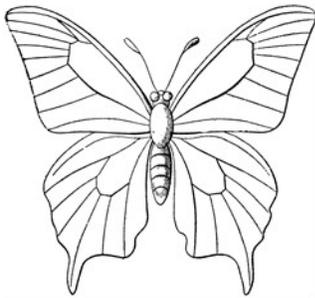
Which butterflies below are symmetrical?





## ACTIVITY 5 – MAKE A BUTTERFLY

Most bugs have the same color and design on the left side and on the right side. If a bug has a blue stripe and a red dot on the left side, the bug will usually have a blue stripe and a red dot on the right side, too. Make your own symmetrical butterfly below.



### Materials needed for this activity:

Butterfly Symmetry Activity Page

Several colors of paint

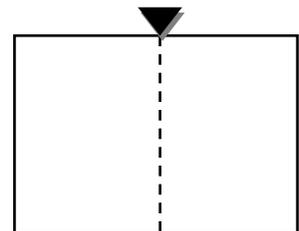
8 ½" x 11" construction paper

Scissors

Scotch tape

Chenille stems

Fold



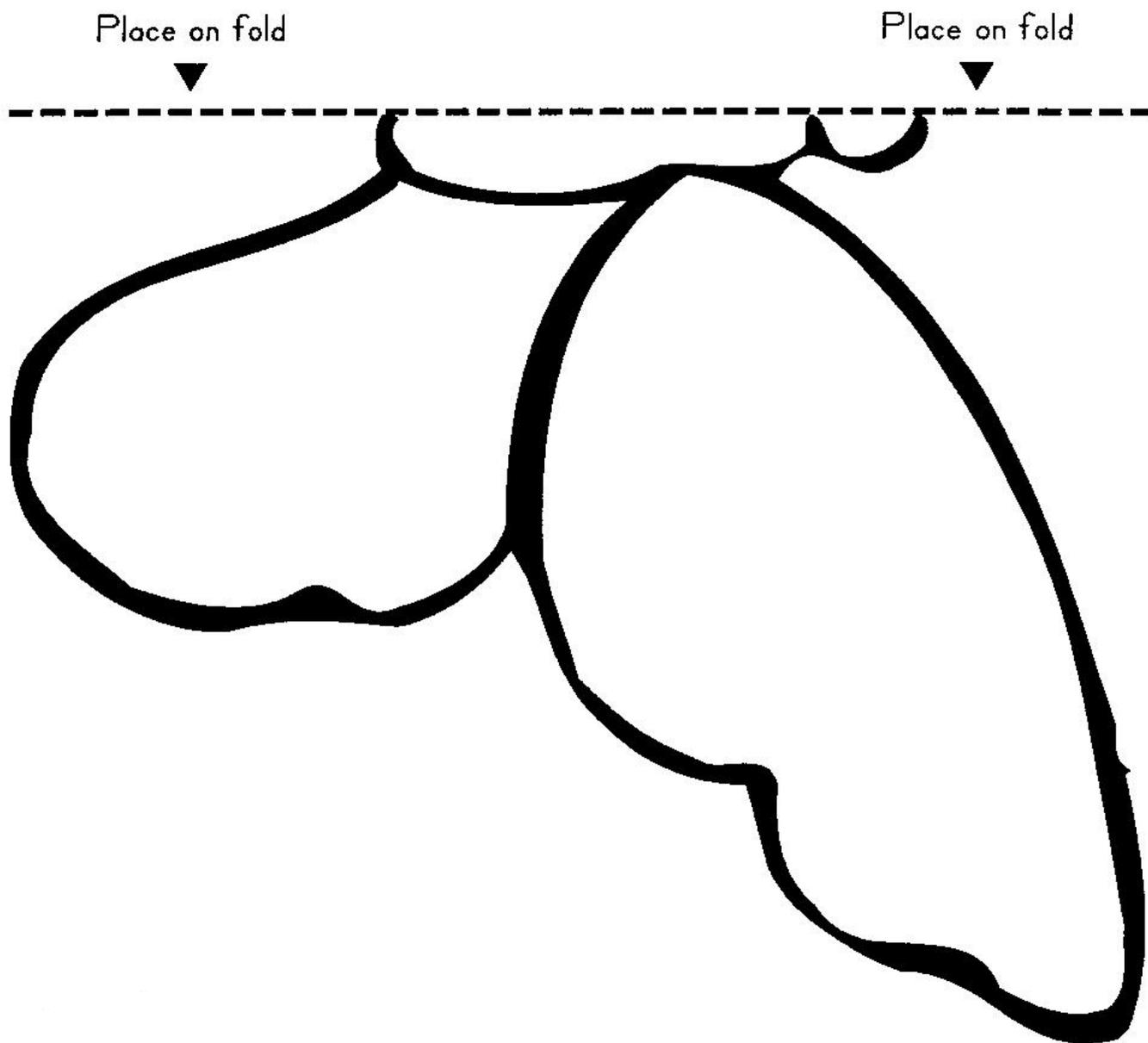
### What you will do:

1. Fold construction paper in half like a book.
2. Cut the Butterfly Symmetry Activity Page along the dotted line. Place the Butterfly Symmetry Activity Page on top of the folded construction paper. Be sure the cut edge is on the fold.
3. Cut the butterfly shape out. Be sure not to cut along the fold where the body of the butterfly is.
4. Unfold the paper. You should have a butterfly shape. Carefully add dots of colored paint to make a design on one wing of the butterfly.
5. Carefully press both wings together. What happened to the design you made with paint on one of the butterfly's wings? Is your butterfly symmetrical?
6. Finish your butterfly by taping on chenille stem antennae.

### Stretchers

1. Make a variety of butterflies. Use yarn to connect them to a wire hanger to create a mobile of butterflies.
2. Encourage children to create a diorama in a shoebox for their bug. Use things from nature to make it realistic.

# Butterfly Symmetry Activity Page

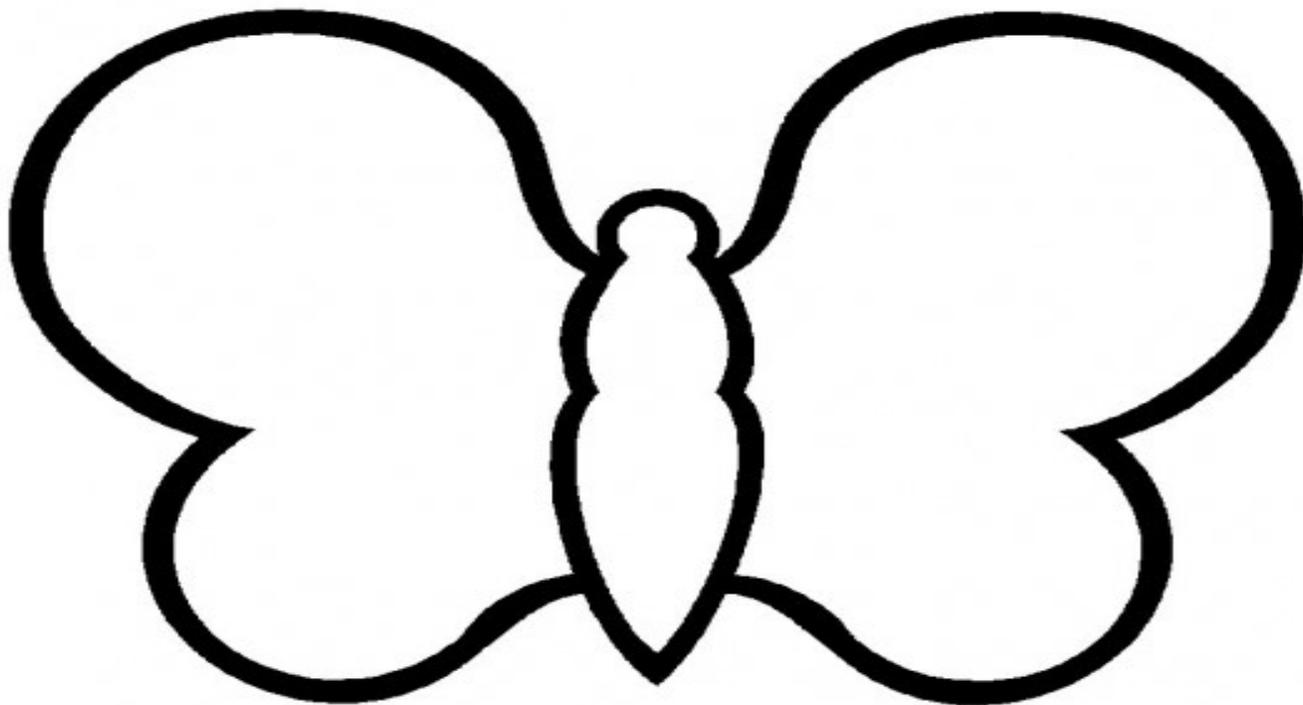
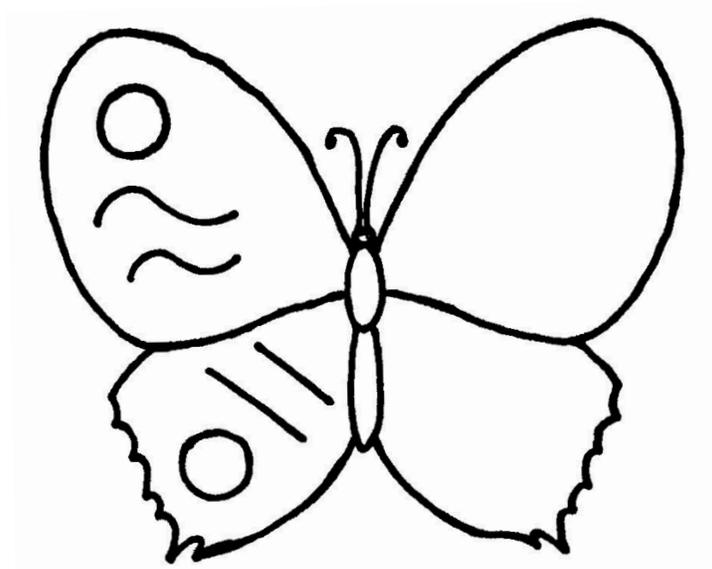




## ACTIVITY 6 – MATCH THE BUTTERFLY

Make the top butterfly the same on both sides.

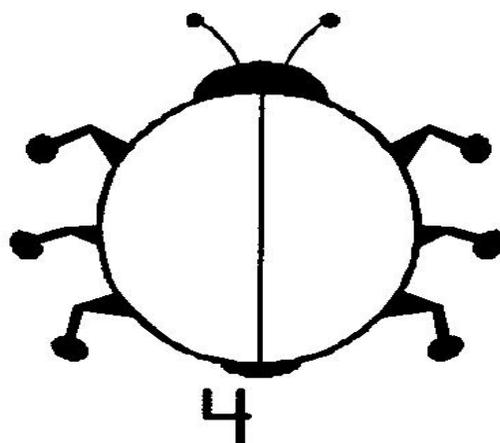
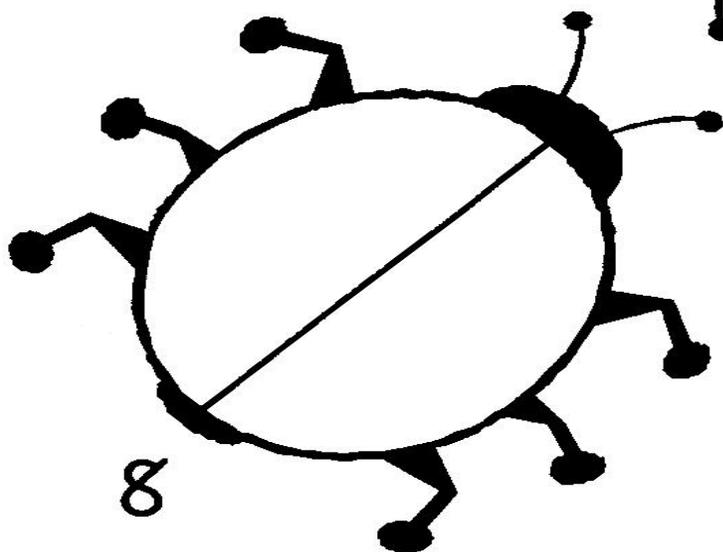
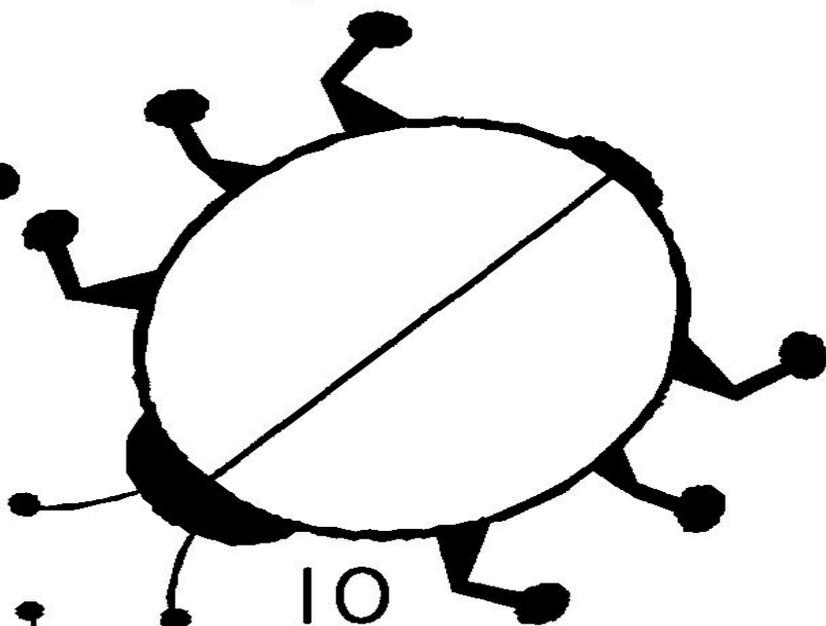
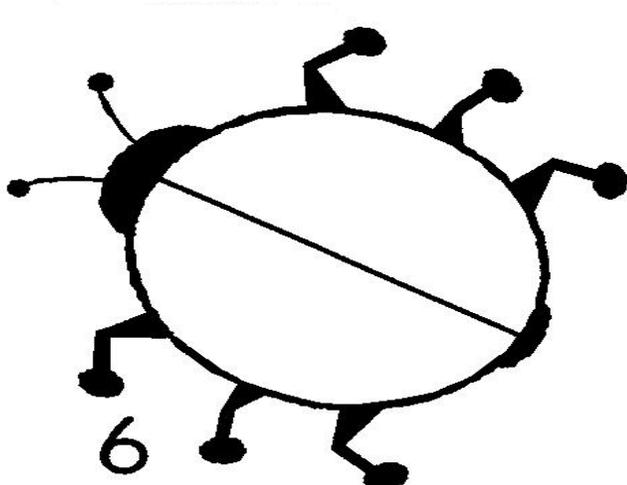
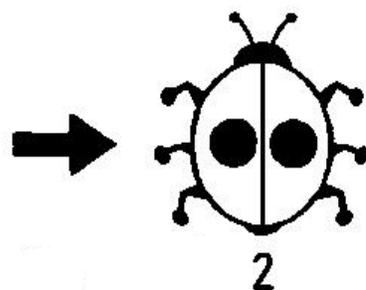
Use the bottom butterfly to create your own symmetrical pattern.





## ACTIVITY 7 – SPOT THE LADYBUG

Look for a number by each ladybug. Put that number of spots on each ladybug like this. Remember, bugs are the same on both sides.





## ACTIVITY 8 – MAKE A SHAPE BUG

Bugs can be many different shapes and sizes. Bugs can be almost any color or pattern. Take a walk outside and look at all the different kinds of bugs. What kind of bug would you make if you could create your own special bug? Would it be large or small? Would it be brightly colored or would it be hard to see in a pile of leaves on the ground?

### **Materials needed for this activity:**

Glue      Crayons or markers      Scissors      Pencil      White or colored paper  
Objects with a variety of shapes to trace (optional)  
Buttons, chenille stems, sequins, glitter (whatever you need to decorate your bug)

### **What you will do:**

1. Think about a bug you would like to make. Think about the shapes you will need to make your bug. Draw the shapes you will need on the white or colored paper. Some children may need to trace around objects to get the shapes they need. Some children may choose to decorate an object like a comb or a tongue depressor as a bug.
2. Cut out the shapes you need to make your bug.
3. Glue the shapes together to make your bug.
4. Color and decorate your bug using all of the things you collected.

### Stretchers

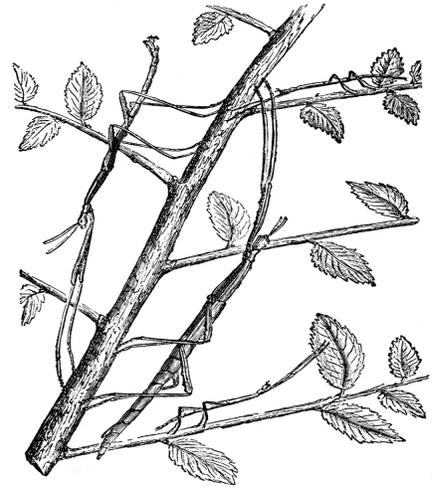
1. Encourage children to make a bug collection with the bugs they made. Let children glue the bugs they made in the lid of a shoebox or on a piece of cardboard and label each bug with a name they choose.
2. Invite older children to write a story about their special bug. Have them include where the bug lives, what it eats, and how it protects itself from its enemies.





## ACTIVITY 9 – BUG HIDE AND SEEK

Have you ever wondered how bugs stay safe from their enemies? One way bugs stay safe is to look like the things around them. This is called camouflage. This picture shows an insect called a walking stick. Can you guess how this bug got its name? This bug stays safe by looking like a twig or a stick. The walking stick stands very still so that when birds or other animals are looking for a meal, they think the walking stick is part of a tree and not something good to eat.



### Materials needed for this activity:

Bug Hide and Seek Activity      Scissors      Markers or crayons  
White paper

### What you will do:

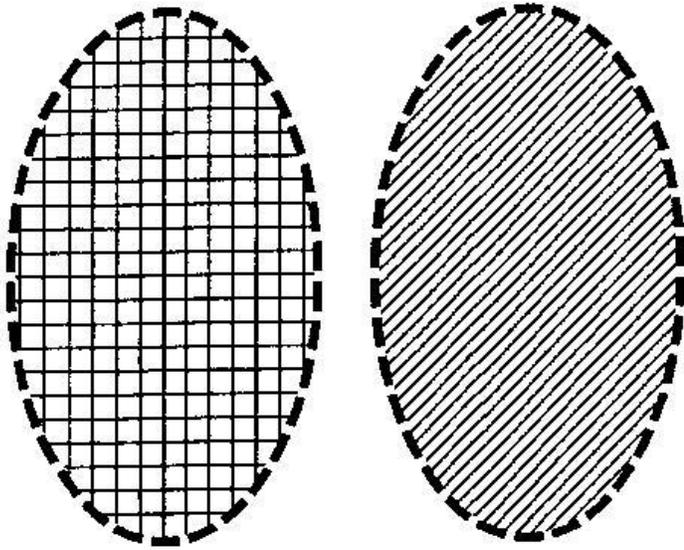
1. Cut along the dotted lines. The ovals are the bugs, and the squares are the hiding places.
2. Lay each bug on the hiding places one by one. Which hiding place should each bug use to stay safe from enemies? Why?
3. Trace the shape of one of the bugs and one of the hiding places onto a piece of white paper to make your own bug and hiding place. Use crayons or markers to create your own camouflage. *Remember the bug and the hiding place should match to keep the bug safe.*

### Stretchers

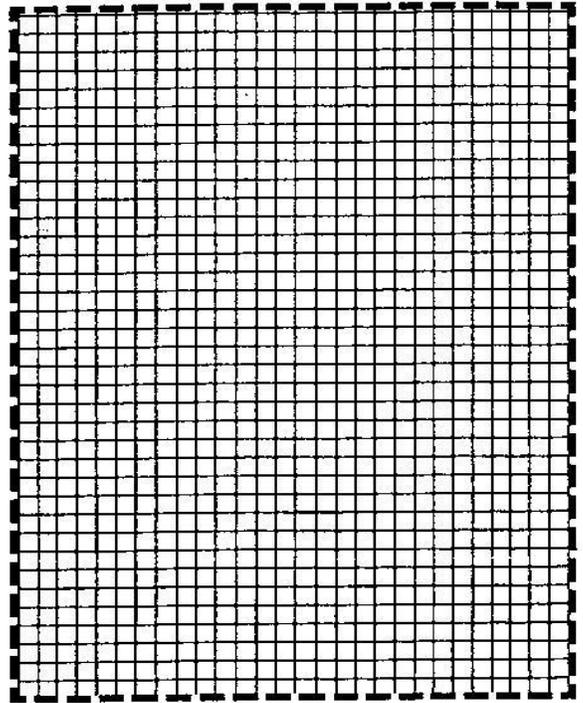
1. Encourage children to make bugs out of newspaper, wallpaper or colored construction paper. Take turns hiding the bugs in plain sight. Remember the bugs are hardest to see when they hide on something that is the same color as they are or on something that looks like them.



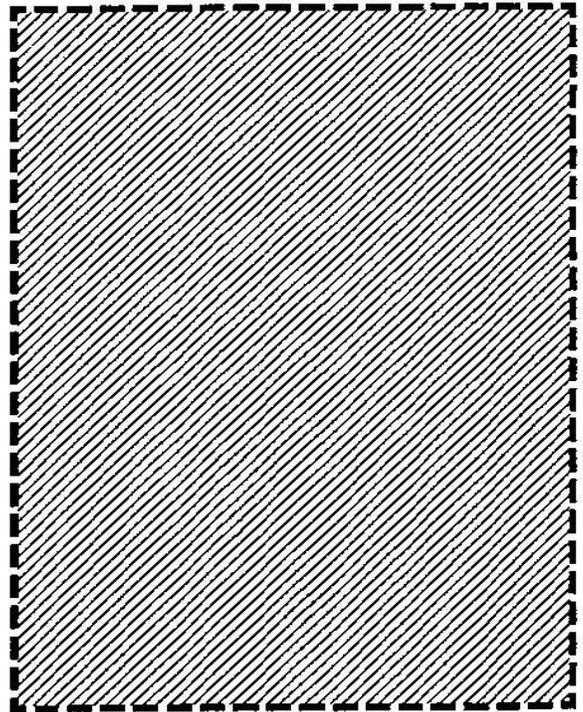
## Bug Hide and Seek Activity Page



Stretchers



Use wallpaper or gift wrap scraps to make a camouflage game. Make 6 squares from a different design and glue them onto index cards. These are the hiding places for the bugs. Make 6 ovals out of the scraps, one to match each square, and glue them onto index cards. These are the bugs. Mix up the cards and lay them all face down. Invite one child to choose 2 cards. If the child chooses a bug and a hiding place that match, the bug is safe, and the child may lay the pair of cards aside. Then the next child takes a turn. If the child chooses 2 bugs, 2 hiding places, or a bug and a hiding place that do not match, the cards are put back and the next child takes a turn. Play continues until all the bugs are safe.





## ACTIVITY 10 – COPYCAT BUGS



Monarch Butterfly

Some bugs stay safe by looking like bugs that taste bad. One insect that stays safe this way is a butterfly called a viceroy. A viceroy butterfly looks almost the same as a monarch butterfly. Both of them have very bright orange and black wings, but the monarch tastes bad.

The caterpillars of monarch butterflies feed on milkweed. This causes the grown up monarch to have milkweed poison in them. If a bird eats a monarch butterfly, the bird will get sick and throw up. After that, the bird will remember the bright orange and black colors and will not eat any butterfly with those colors. This keeps the viceroy butterfly safe because birds think the viceroy will make them sick too.



Viceroy Butterfly

### **Materials needed for this activity:**

Copycat Bug Activity Page

Crayons

### **What you will do:**

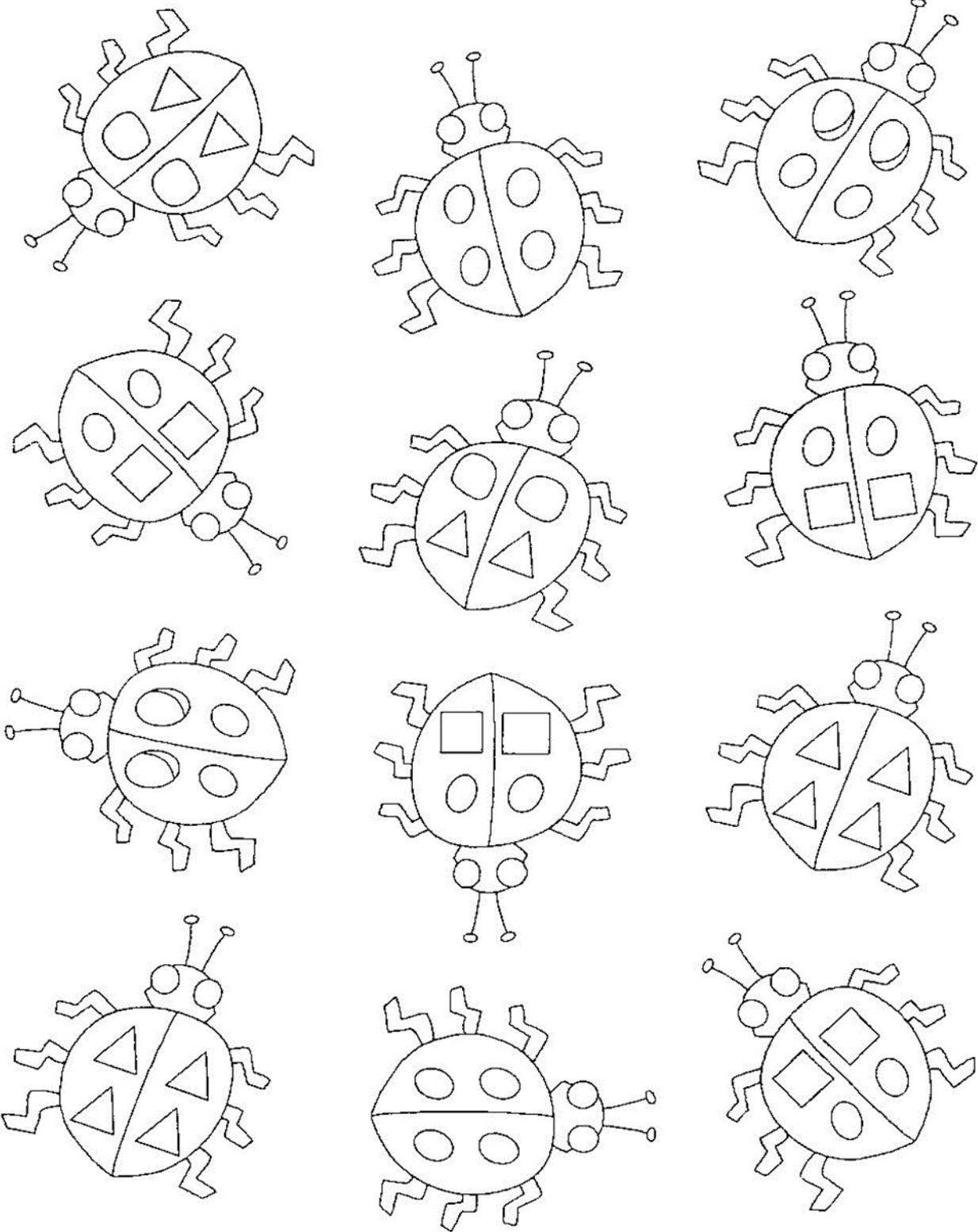
1. Look carefully at all the bugs on the Copycat Bug Activity Page.
2. Find the match for each bug and circle the matching bugs with the same color crayon.

*Hint: Each bug has only one copycat bug that looks exactly like it.*

Stretchers

Challenge children to make a copycat bug. Invite children to work in pairs. Give each child two oval pieces of construction paper to use as bugs. Have each child draw a unique design on one of their bugs. Let the children exchange designed bugs with their partner. Have children make a copycat bug by copying onto their blank bug the same design their partner drew.

# Copycat Bug Activity Page





## ACTIVITY 11 – WHERE ARE BUGS IN WINTER?

Bugs are almost everywhere you look in the spring, summer and fall. But when it gets cold outside, bugs are not easy to find. Have you ever wondered what happens to bugs in the winter? Not all bugs do the same thing.

Some bugs, like crickets, lay eggs in the ground before it gets really cold outside. After the crickets lay their eggs, they die. The eggs hatch when it gets warm again in the spring.

Other bugs, like ladybugs, **hibernate**, or sleep, through the winter. They find a warm spot in a hole in a tree or maybe under your house and sleep during all the cold days. When it starts getting warm again, they wake up.

Ants live all winter deep in their tunnels under the ground. Honeybees spend the winter snuggled close to each other in their hive.

Some bugs, like monarch butterflies, **migrate**, or travel to a different part of the world. When the weather starts to get cool, they fly to places where the air is warm. The butterflies stay in the warm place for several weeks. When spring comes back to the place they left, the butterflies fly home.

### Materials needed for this activity:

Help the Butterflies Migrate Activity

Pencil

### What you will do:

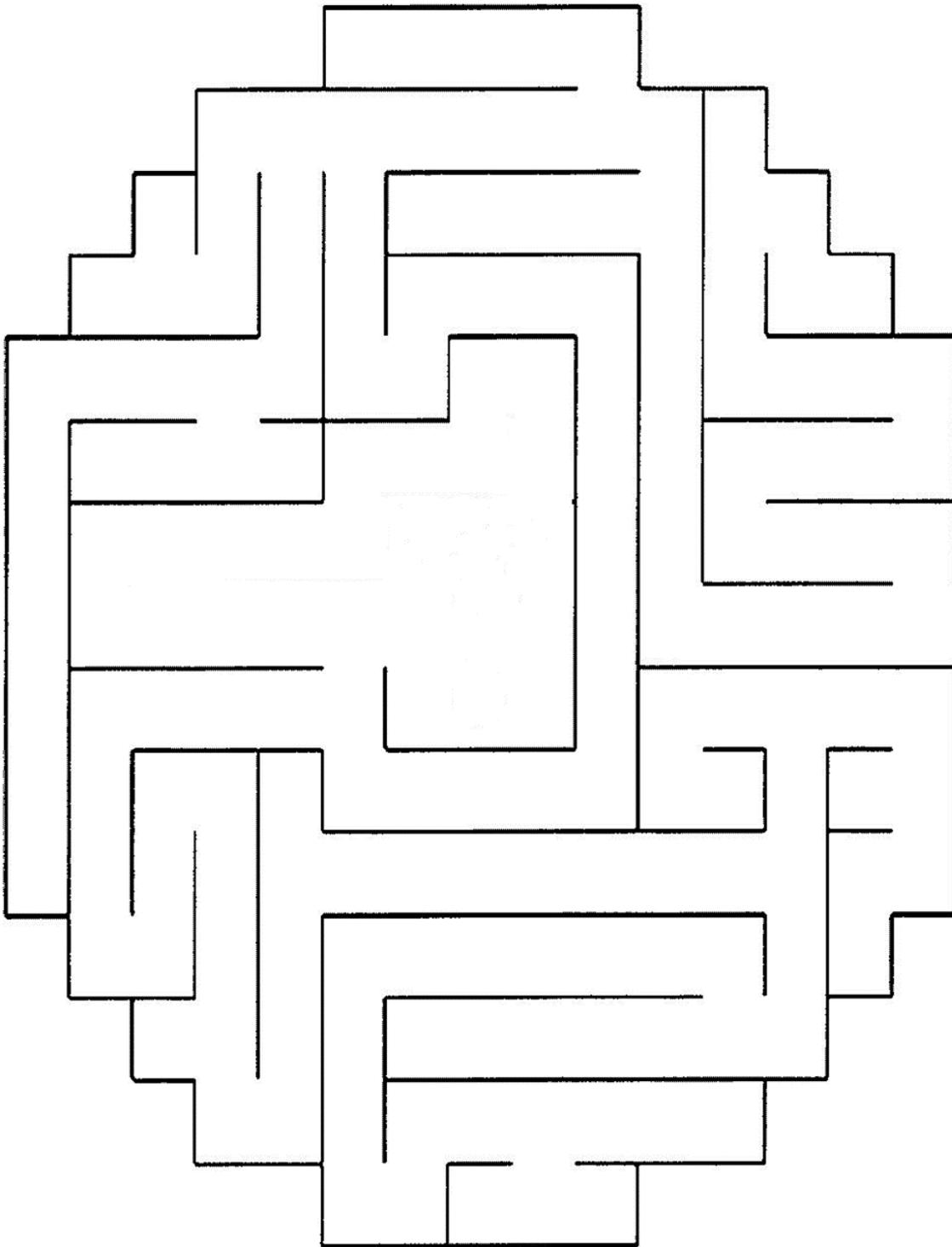
1. Draw a line through the maze from the monarch butterflies to the trees where they will spend the winter. Do not cross over the lines.

Stretchers

Encourage children to think about ways people keep warm in the winter. Make a poster using pictures from magazines showing the ways people keep warm. Are people and bugs similar in any of the ways they keep warm? (Example: *People sometimes “migrate” to a warmer part of the world.*)



# Help the Butterflies Migrate Activity Page





# Activity 12

## My Bug Chart

Bug Column	I fly	I crawl	I fly and crawl	I am one color	I am two colors	I am bigger than this 	I am smaller than this 	Record how many of each you observed
Ant 								
Butterfly 								
Bee 								
Fly 								
Ladybug 								
spider 								
_____								
_____								



## Activity 13 Bug Observation Sheet

Now it is time to go outdoors for some observation. That means watching and noticing important or interesting things about your bug. Find 2 bugs that you really like and draw a picture of them in the boxes below. Then write 1 or 2 observations about each bug.

Color: \_\_\_\_\_ Shape: \_\_\_\_\_

This insect is \_\_\_\_\_

\_\_\_\_\_

Color: \_\_\_\_\_ Shape: \_\_\_\_\_

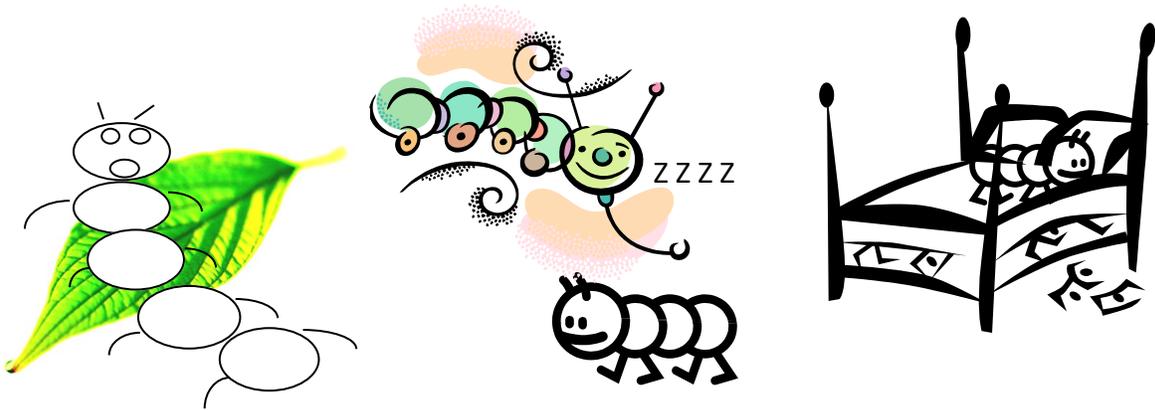
This insect is \_\_\_\_\_

\_\_\_\_\_

# Extra Bug Fun!



# “Bedtime Bugs Scrambled Sentences”



Unscramble the following sentences and write the correct sentence on the lines.

1. legs. The bug six has

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2. bug on The leaf. sleeps

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3. snoring. The is bug

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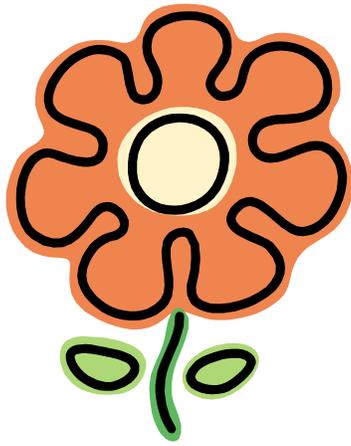
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4. Bugs sleep. of a lot need

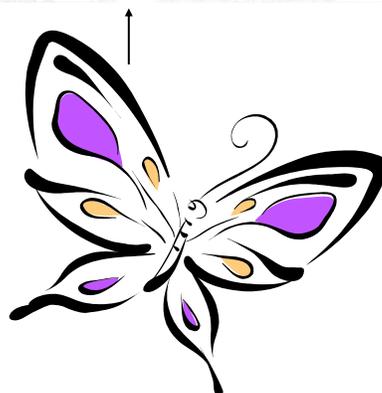
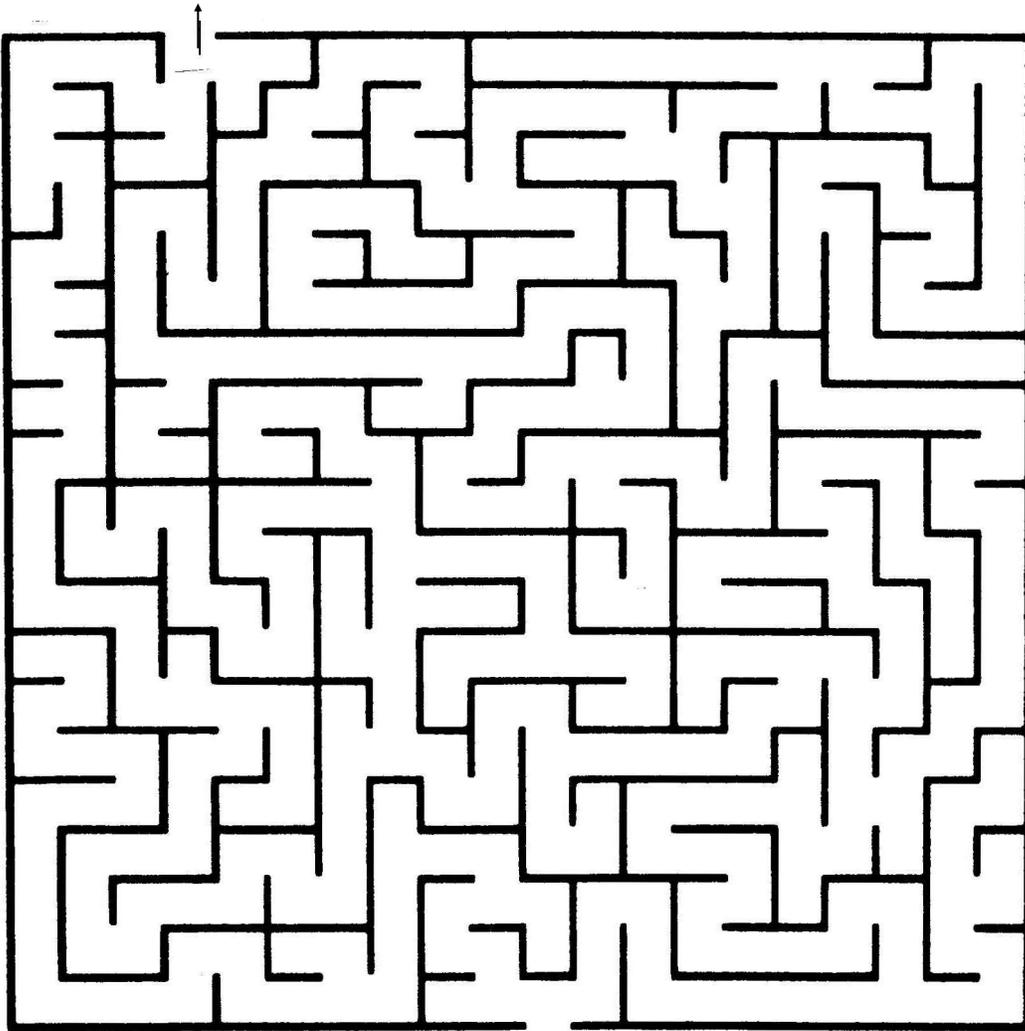
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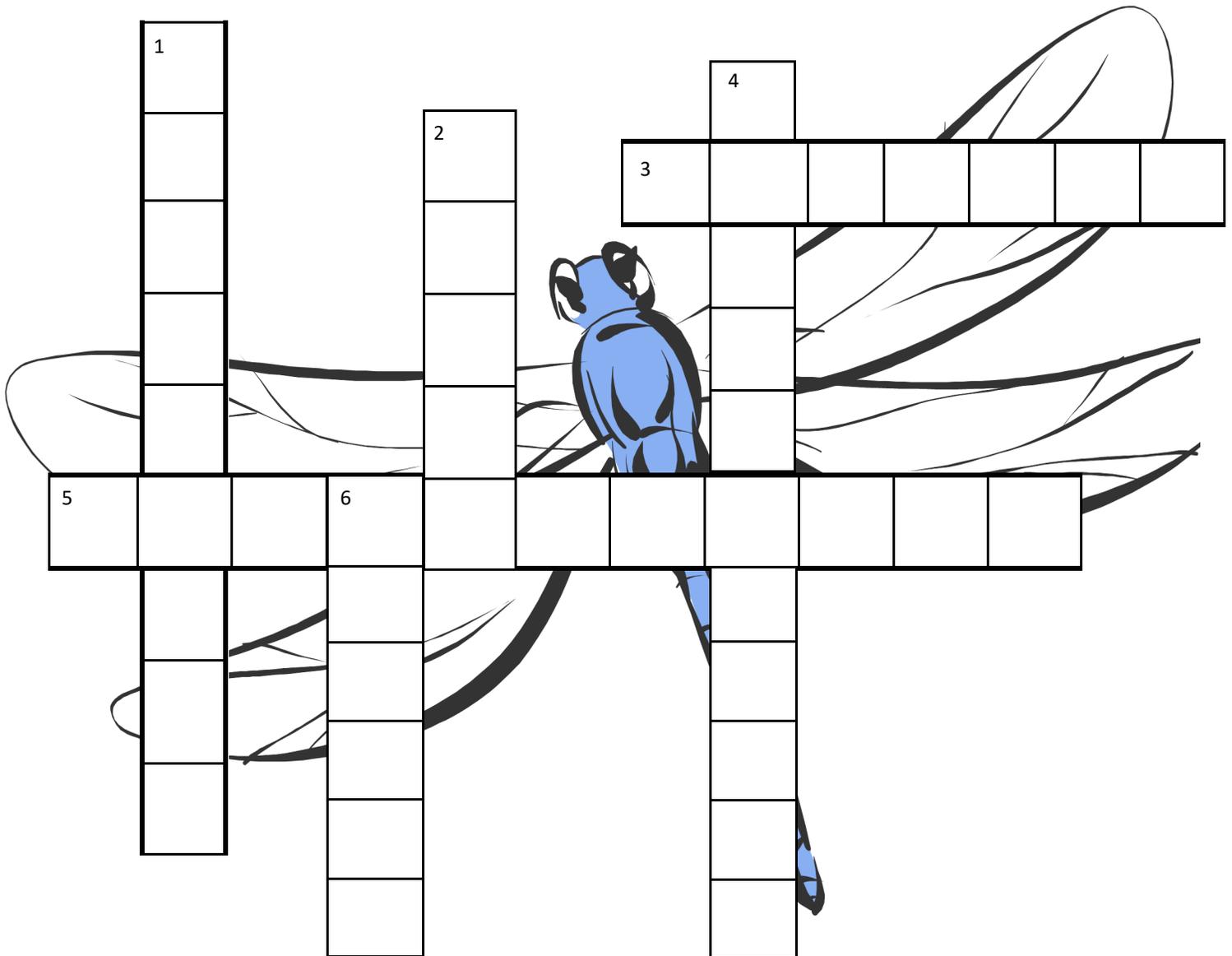
Help the butterfly  
find the flower!



# Bug Crossword

## WORDS

MOTHS GRASSHOPPER SPIDER BUTTERFLY LADYBUG CATERPILLAR



### ACROSS

- 3. Small, round beetles that are often red with black spots.
- 5. A grass eating insect with long hind legs it uses to jump.

### DOWN

- 1. A flying insect that feeds on nectar.
- 2. Insects with feathery antennae that are awake at night
- 4. The larva of a butterfly or moth.
- 6. Spins a web and has 8 legs.



# Mini 4-H Bugs Record Sheet

My favorite bug is \_\_\_\_\_.

My favorite bug moves by \_\_\_\_\_  
\_\_\_\_\_.

If I could be a bug, I would look like  
this:

Name: \_\_\_\_\_

Date: \_\_\_\_\_