

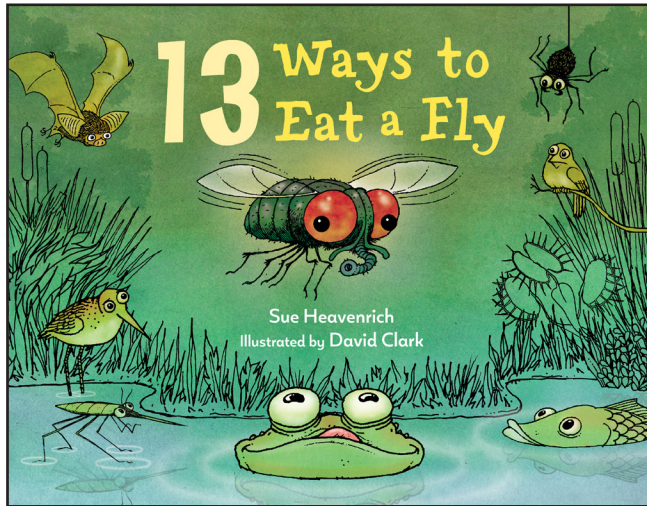
# 13 Ways to Eat a Fly

## ACTIVITY KIT

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★ "Well stocked with easy-to-digest facts..."  
—*Booklist*, starred review



Sue Heavenrich  
Illustrated by David Clark  
978-1-58089-890-4 HC  
e-book available

### About the Book

Science meets subtraction in this fresh and funny STEM picture book with plenty of ewww factor to please young readers. A swarm of thirteen flies buzzes along, losing one member to each predator along the way. Whether the unfortunate insects are zapped or wrapped, liquefied or zombified, the science is real—thrillingly chilling and laugh-out-loud gross.

### About the Author

Sue Heavenrich has eaten flies—mostly by accident. She has also done research on ants, bees, spiders, and cockroaches. After earning her MS in biology and teaching high-school science, Sue began writing about science and nature in magazines, newspapers, and blogs. She is the author of several books, including *Diet for a Changing Planet*, a book for teens about how to save the world by eating bugs, weeds, and invasive species.

### About the Illustrator

David Clark is the illustrator of many books for children, including *Never Insult a Killer Zucchini*; *What's for Dinner? Quirky, Squirmy Poems from the Animal World*; and the *Just Like Us!* series. He is also the illustrator and co-creator of the syndicated comic strip *Barney & Clyde*.



# 13 Ways to Eat a Fly

## Activity Kit

## Author's Note & Related Reading



**13 Ways to Eat a Fly** is a counting-backwards book, a food-web look, and a little bit of wordplay about predators and prey. What it is not: a cookbook—although there is a nutrition label should one wonder about the minimum daily requirements in a gram of flies. There is math (subtraction) and science (birds and fish and fly-eating plants) and even zombies!

I wrote this book to introduce children—and adults—to the diversity of flies around us. Most people think of flies as pests, but they have important jobs in nature. Flies help decompose dead things, they pollinate flowers, they eat pesky insects, and they are a source of food for other organisms.

### Related Reading

Gravel, Elise. *The Mosquito*. Tundra Books, 2021.

Gibson, Roberta, and Anne Lambelet. *How to Build an Insect*. Millbrook Press, 2021

Baxter, Roberta. *Flies: Native Pollinators*. Mitchell Lane Publishers, 2020

Hansen, Grace. *Becoming a Fly (Changing Animals)*. Abdo Kids, 2018

Murray, Carol, and Melissa Sweet. *Cricket in the Thicket: Poems about Bugs*. Christy Ottaviano Books, 2017

Heos, Bridget, and Jennifer Plecas. *I, Fly: The Buzz About Flies and How Awesome They Are*. Henry Holt and Co., 2015.

# 13 Ways to Eat a Fly

## Activity Kit

## Before Reading

Pre-reading concept reviews help enrich students' learning experience!

### For younger students (K-2nd):

- After looking at the cover of the book and reading the title, ask students what they think *13 Ways to Eat a Fly* is about. Write their responses on chart paper.
- Explain what the food web is.

### For older students (3rd-5th):

- Based on the title, ask students to describe what they think the book is about. Write their responses on chart paper.
- Have students discuss the following questions in small groups. Tape questions to a wall and ask students to tape their answers beneath the questions.
  - What is a food web?
  - What makes a fly an insect?
  - What fly-eating animals live in your neighborhood?
- Provide a list of vocabulary words. Have students look words up in a dictionary and write a definition.

# 13 Ways to Eat a Fly

## Activity Kit

## Science Activities

Discover the wide world of fly science with these connection activities.

### Fly-Watching

Invite students to find a fly to watch and write down their observations:

- What does your fly look like? (things to note: color, patterns, bristles, size)
- Where is your fly?
- What is your fly doing?
- What does your fly sound like?
- How does your fly move?

Students should also draw a picture of their fly and write a short description of it. Then, as a class, put them together to create a “Guide to the Local Flies” to share with families and fellow students.

### Design a Fly

#### Materials:

- blank paper or cardstock
- construction paper and other papers
- scissors
- glue
- crayons and/or markers
- pipe cleaners (optional)

#### Directions:

Ask students to create their own fly. Be creative! It can be any kind of fly: skinny, chunky, short-legged, long-winged. Like all flies, your students’ flies will need a head, a thorax, and an abdomen.

**HEAD:** This is where eyes, antennae, and mouthparts are located.

**Antennae:** Flies have two.

**Eyes:** Flies have compound eyes. Some are striped, some have a line through them, and some are really huge!

**Mouthparts:** Flies can have spongy tongues or sharp needle-like mouths.

**THORAX:** Can be plain or striped; this is where wings and legs attach.

**Legs:** Flies have six.

**Wings:** Flies have two (one pair). The veins make them look like windows. Some flies have stripes or speckles or even spots on their wings.

# 13 Ways to Eat a Fly

## Activity Kit

## Science Activities

Discover the wide world of fly science with these connection activities.

### Design a Fly (cont'd)

ABDOMEN: Can be long and skinny or short and fat. Some are striped, some metallic, and some are bristly.

Ask students to answer the following questions on a separate piece of paper:

- Where does your fly live?
- What does it eat?
- What eats it?
- Does it have any fly superpowers?

For younger students, see the Design a Fly worksheet on page 13.

For inspiration, students can find images of flies through the following resources:

<https://www.insectimages.org/index.cfm>

Insect Images is a joint project of The University of Georgia–Warnell School of Forestry and Natural Resources, College of Agricultural and Environmental Sciences–Department of Entomology, Center for Invasive Species and Ecosystem Health, Georgia Museum of Natural History, The Entomology Society of America and USDA Identification Technology Program.

<https://animaldiversity.org/accounts/Diptera/pictures/>

The Animal Diversity Web is hosted by the University of Michigan.

<https://bugguide.net/node/view/55>

Bug Guide is an online community of naturalists.

<https://www.inaturalist.org> (search for flies and predators)

iNaturalist is a collection of photos submitted by scientists and nature enthusiasts. Anyone can join and you can even create classroom “projects.”

### Life Cycle of a Fly

Invite students to draw a fly life cycle from egg to larva, to pupa, then adult. *I, Fly*, listed in the Related Reading section on page 2 of this kit, is a great resource for fly life cycles.

# 13 Ways to Eat a Fly

## Activity Kit

## Science Activities

Discover the wide world of fly science with these connection activities.

### Fly/Not Fly

Make some cards with photos of insects that have “fly” in their name: butterfly, dragonfly, damselfly, caddis fly, scorpion fly, stone fly, sawfly, firefly, mayfly, whitefly.

Make some cards with photos of flies (*Diptera*): mosquito, syrphid, gnat, crane fly, etc. (see sources for images on page 5)

Mix the cards all together and have kids sort them into piles: fly/not fly.

### Plant a Flowerfly Garden

Flowerflies are amazing and beautiful. They look a bit like bees, but they don’t have stingers. And their larvae eat aphids! Flowerflies are generalists; they’ll happily slurp down nectar and pollen from a variety of flowers. Because they have short, unspecialized mouthparts, they prefer flat, open flowers or clusters of small flowers where they can perch on the petals. And because they’re around throughout the growing season, they need a variety of blossoms that bloom over a long range of time.

So when you plant pollinator plants in the school garden, sow some seeds for the flowerflies. Better yet, let some “weeds” bloom in your pollinator patch. Here are some flowerfly favorites:

Aster	Cinquefoil	Goldenrod	Queen Anne’s lace
Basil	Clover	Joe Pye weed	Wild strawberries
Black-eyed Susan	Coreopsis	Lavender	Sweet alyssum
Buckwheat	Cosmos	Marigold	Thyme
Calendula	Daisies	Mint	Yarrow
Chamomile	Dandelions	Mustard	Zinnias
Chicory	Dill	Nasturtium	
Chives	Fennel	Parsley	
Cilantro	Fleabane	Parsnip	

You can learn more in “The Buzz About Flower Flies,” MOF&G Spring 2022, p. 14-15 ( <https://www.mofga.org/our-community/publications/the-maine-organic-farmer-gardener/>).



# 13 Ways to Eat a Fly

## Activity Kit

## Math & Engineering Activities

Explore math concepts and practical problem-solving with these math and engineering activities.

### Doubling

Students can use jelly beans and a jar to figure out how fast a fly population would grow if there were no predators. In reality, flies produce many eggs at one time (hundreds) and take two weeks or more to go through a life cycle. But for this activity, students will imagine that their flies can each produce two more flies each day.

Put two jelly beans in a jar—they are the parent flies. Each day, double the amount of flies in the jar. Day 2 = 4 flies (jelly beans); Day 3 = 8 flies (jelly beans).

- Have the kids figure out how many flies there will be in the jar for days 4–6.
- Have them graph the change in population.
- Ask them to predict what the population growth will look like.
- Ask them to predict when the jelly beans will fill up the jar.

### Catch a Fly

Ask students to study how the predators in *13 Ways to Eat a Fly* capture their yummy fly snacks. Invite them to do independent research. For example:

- Frogs zap their prey with fast, sticky tongues attached to the front of their mouth. ([https://youtu.be/tOJy\\_xSMFZk](https://youtu.be/tOJy_xSMFZk))
- Crab spiders wait in ambush. (<https://youtu.be/korgtMJUQpg?t=57>)
- Spotted flycatcher catches a fly. (<https://youtu.be/sFFCcJWKq9U>)
- Bat catching prey. (<https://youtu.be/9tEpQMjvUAY>)
- Venus flytrap catching fly. (<https://youtu.be/qzLn3rWTwc?t=43>)

**The Engineering Problem:** Design something that can capture a fly to eat. Kids can work in “design teams” to brainstorm ideas, draw their fly-catching design, and build a model.

**Materials:** Can come from the recycling bin, craft cupboard, or even the cafeteria. Here are some suggestions:

- paper, cardboard, markers
- cups, yogurt containers, milk cartons, paper plates
- string, tape (masking, duct)
- rubber bands, craft or popsicle sticks, straws, plasticware
- scissors
- twist-ties, foil, wire, screen, fabric

Share the inventions with an exposition or using video technology.

# 13 Ways to Eat a Fly

## Activity Kit

## Language Arts Activities

Express scientific observations through poetry with these activities.

### Fly-ku and other poetry-on-the-fly

One great way to generate words for use in fly poems is to have kids share their observations. As a class, brainstorm lists for how flies move (verbs), what they look like (adjectives), where they are (nouns and maybe phrases), etc.

A **haiku** is a traditional Japanese poem. It is short, like a snapshot or a postcard. And usually it's about something in nature. These short poems have only three lines:

- The first line has five syllables.
- The second has seven syllables.
- The last line has five syllables.

A **fly-ku** is haiku about flies (and maybe their predators). To get started, students should think about what they want to say. Maybe they want to write about a mosquito or a frog. Jot down words that describe it. What observation do they want to share? Notes from the Fly-Watching activity on page 4 are a good resource for ideas. Here's an example of a finished fly-ku:

*Listen to the buzz.*

*Even small frogs can hear them—  
They are bright blue flies!*

An **acrostic** is a poem in which the first letters of each line spell out a word. To start, write your word vertically. For example, FLYCATCHER (one of the birds that eats flies). Then fill in the lines with phrases that tell about your subject.

*Flies. Beetles.*

*Leafhoppers.*

*Yummy snacks.*

*Catching them midair*

*At the speed of flight*

*Takes skill.*

*Call me an insect*

*Hero. I bag my bug*

*Every time,*

*Refueling on the wing.*



# 13 Ways to Eat a Fly

## Activity Kit

## Language Arts Activities

Express scientific observations through poetry with these activities.

### Fly-ku and other poetry-on-the-fly (cont'd)

Another short poetry form is the **cinquain** (pronounced sin-cane). It is five lines long, with only a few words on each line.

- The first line has two syllables.
- The second line has four syllables.
- The third line has six syllables.
- The fourth line has eight syllables.
- The last line has two syllables.

Here's an example of a cinquain:

*Fruit fly  
red eyed, hump-backed  
zipping, diving, flitting  
landing on my ripe bananas—  
Buzz off!*

# 13 Ways to Eat a Fly

## Activity Kit

## Art Activity

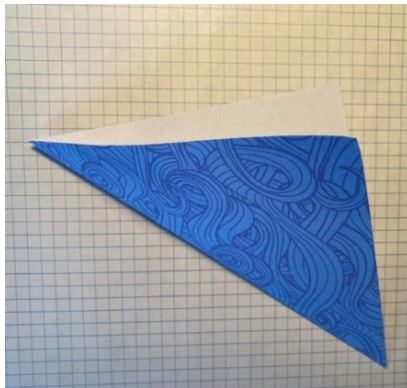
### Folded Fly or Frog Corner Bookmark

#### Materials:

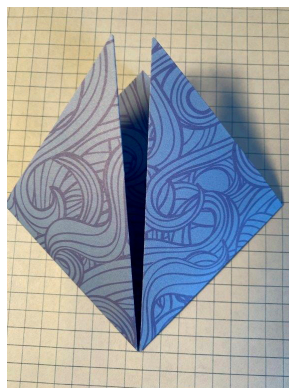
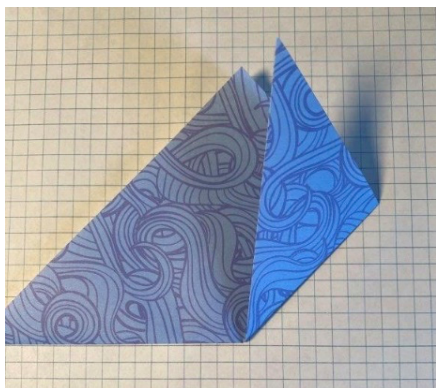
- 6" x 6" (or 15cm x 15cm) square paper
- Other papers (scraps of wrapping paper, colored paper)
- Scissors
- Pencil
- Colored pencils, crayons, or markers
- Glue

#### Directions:

1. Fold one corner of the square paper to the opposite corner, making a triangle.



2. Turn the triangle so the longest (folded) side is nearest you. Now fold the left and right corners to meet the central point of the triangle.

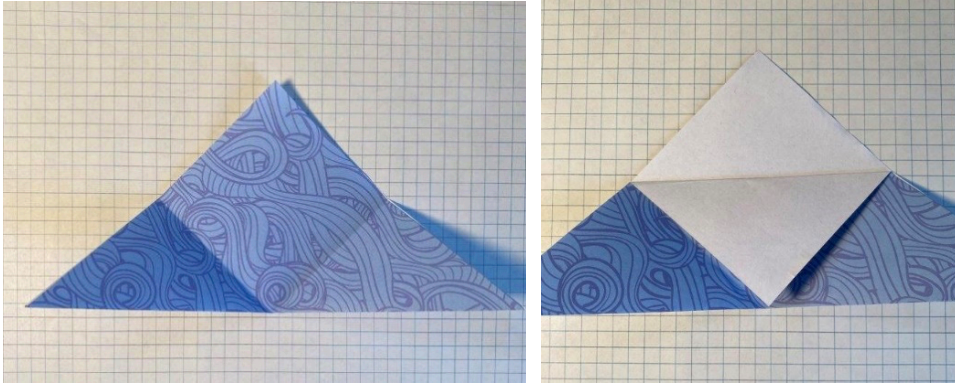


# 13 Ways to Eat a Fly

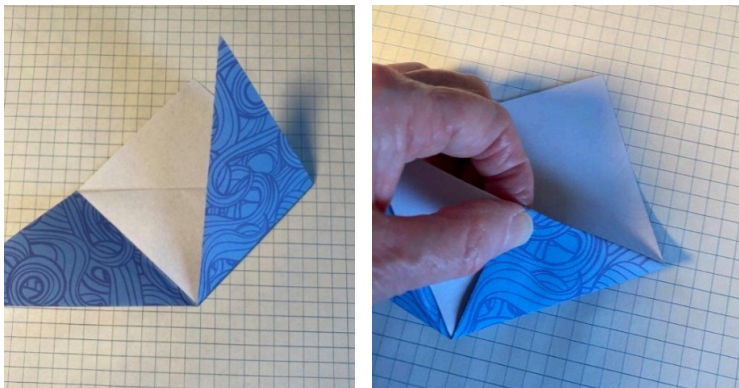
## Activity Kit

## Art Activity

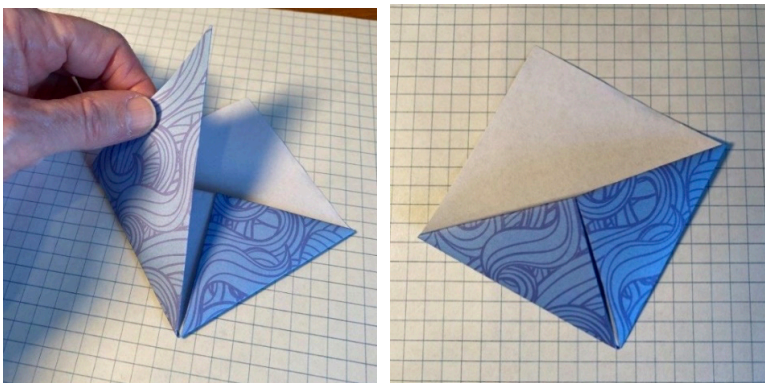
3. Unfold, so you have your large triangle again. Then, slide your finger between the layers of the top point. Fold the top layer down so that the point meets the center of the long, bottom side.



4. Hold down the small middle triangle and bring the right corner toward the center. Tuck the point behind the middle triangle.



5. Repeat with the point on the other side.



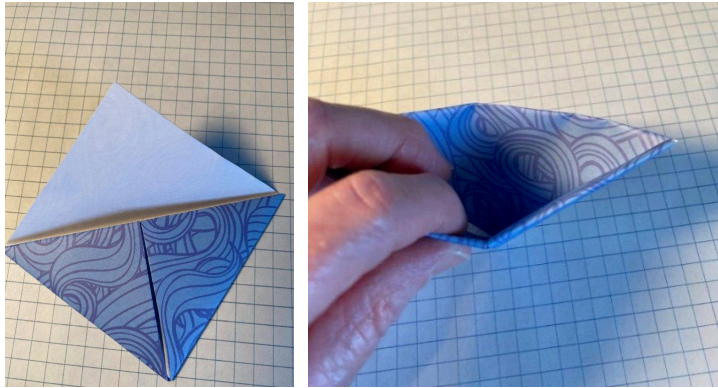


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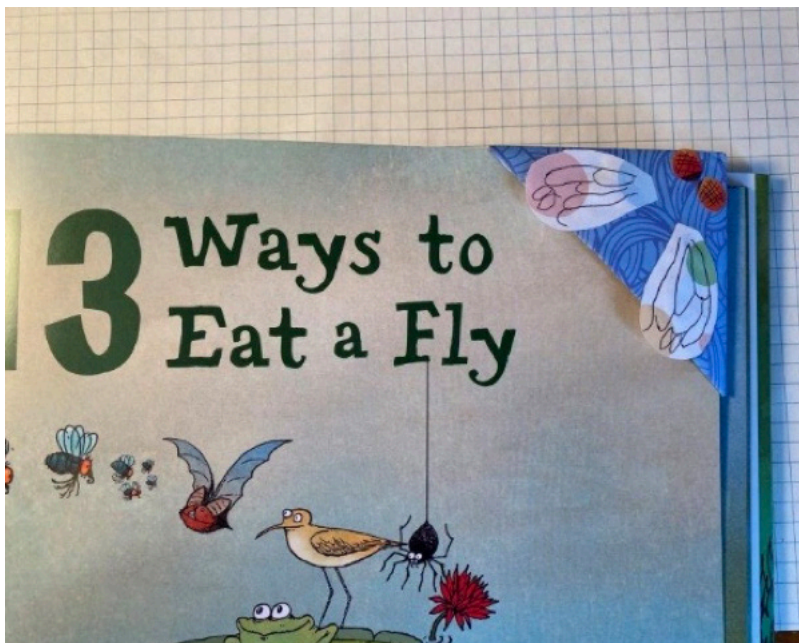
## Art Activity

6. Fold the tip of top triangle to meet tip of bottom triangle, and then tuck the flap of paper inside.



7. Add wings and compound eyes to turn your bookmark into a fly. Or add eyes, wings, beak, legs, and other features to turn your bookmark into a fly-eating creature.

8. Slide your bookmark over the corner of the page before you close the book to hold your place!

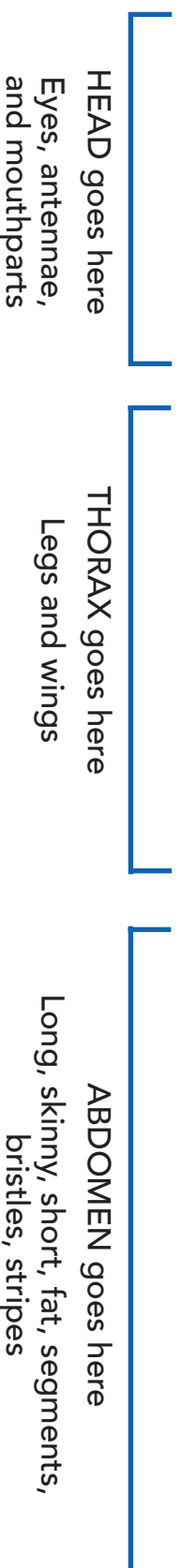


# 13 Ways to Eat a Fly

Activity Kit

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## Design a Fly



# 13 Ways to Eat a Fly

## Activity Kit

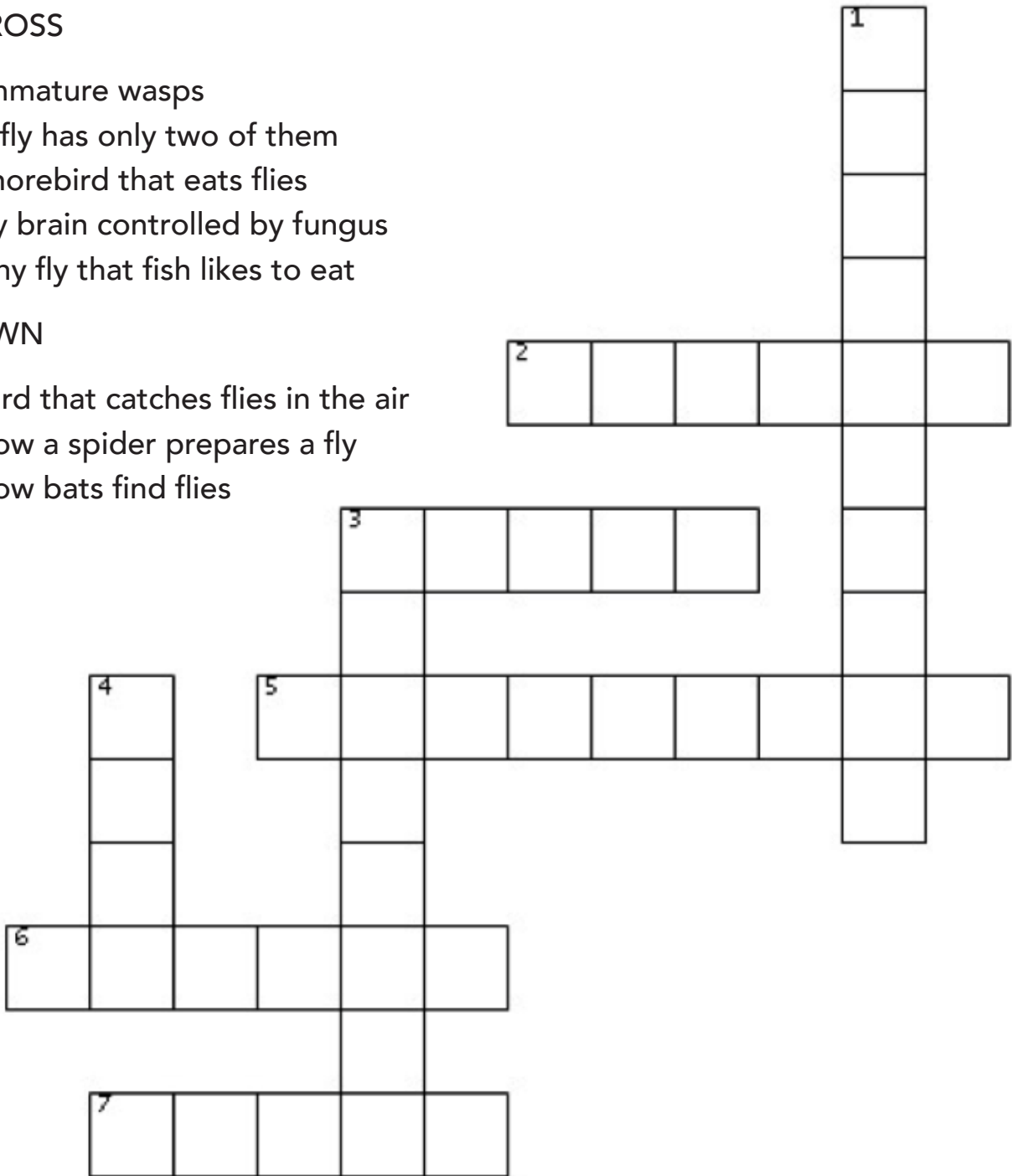
## Eating Flies Crossword

### ACROSS

- immature wasps
- a fly has only two of them
- shorebird that eats flies
- fly brain controlled by fungus
- tiny fly that fish likes to eat

### DOWN

- bird that catches flies in the air
- how a spider prepares a fly
- how bats find flies



# 13 Ways to Eat a Fly

Activity Kit

## Eating Flies Crossword Key

