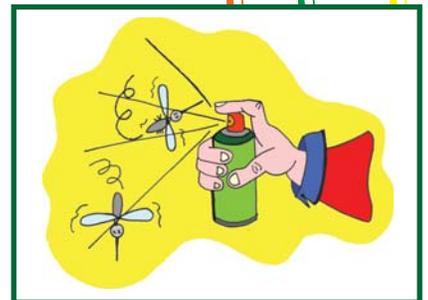


# West Nile Virus Educational Activity Book



NORTH DAKOTA  
DEPARTMENT of HEALTH



**NORTH DAKOTA**  
DEPARTMENT of HEALTH

DIVISION OF DISEASE CONTROL  
Medical Services Section  
600 East Boulevard Avenue, Dept. 301  
Bismarck, ND 58505-0200  
[www.ndhealth.gov](http://www.ndhealth.gov)

Parents and kids:

In this book are some fun activities that can help teach you about the disease West Nile virus (WNV), which is spread by mosquitoes. This book also offers important information about how to prevent mosquito bites and how to reduce mosquito breeding around your home and where you play.

You can help keep yourself and your family safe by following these tips:

- Use an insect repellent containing DEET, picaridin or oil of lemon eucalyptus on clothes and/or exposed skin when outdoors. Always follow the instructions on the label.
- If possible, stay indoors between dusk and dawn because this is the time when the mosquitoes that carry WNV are more likely to bite.
- Wear light-colored, long-sleeved shirts and pants.
- Empty standing water from buckets, pet dishes, wading pools, flower pots and other containers that can hold water or attract mosquitoes.
- Check windows and doors to make sure there are no holes in the screens that can allow mosquitoes indoors.

Knowing what causes West Nile virus can help you stay healthy. The North Dakota Department of Health would like to thank you for taking time to complete this activity book.

Regards,

Tracy K. Miller, M.P.H.  
Division of Disease Control  
WNV Program Manager

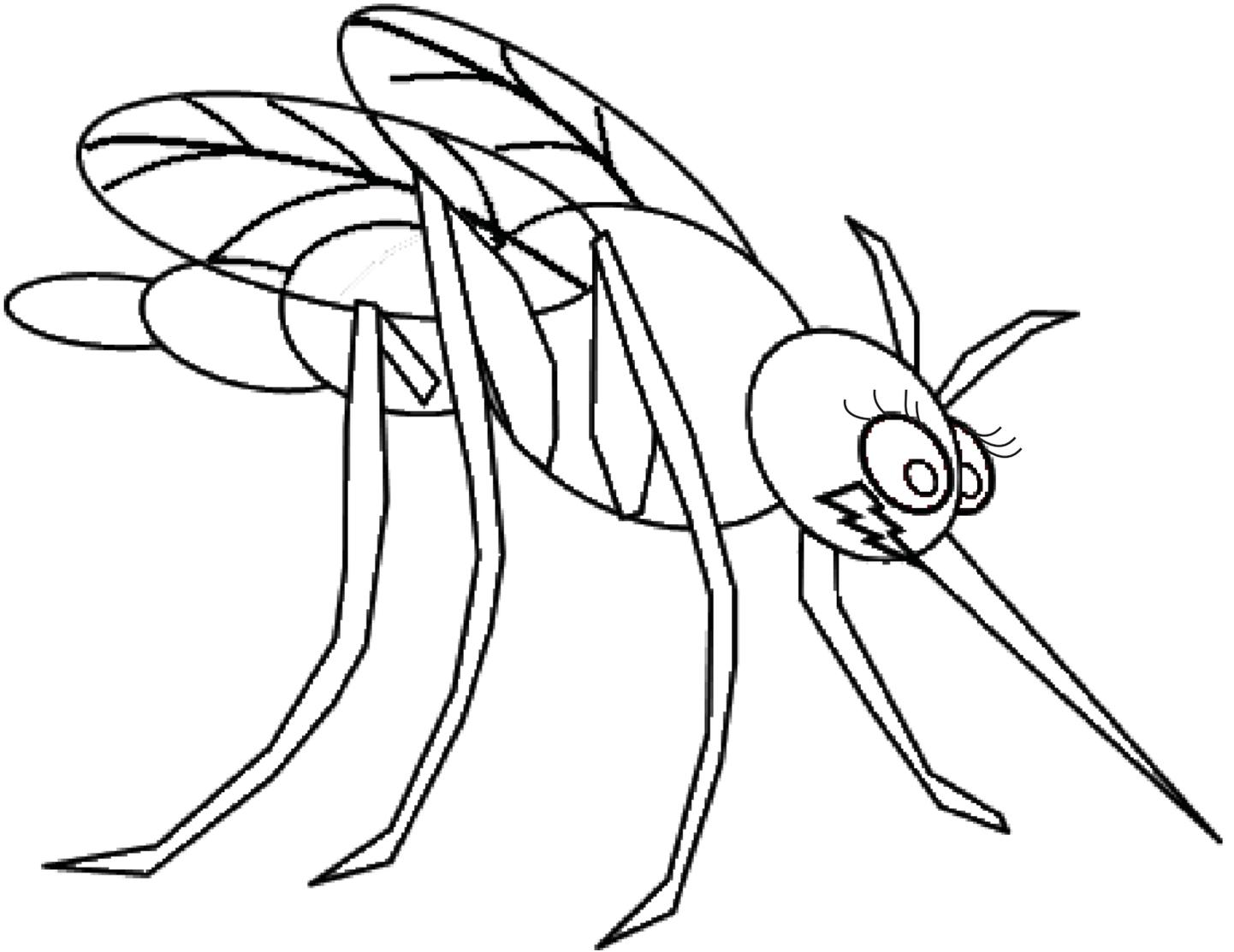
Michelle Feist  
Division of Disease Control  
WNV Surveillance Coordinator

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This is Marcy Mosquito.  
She is hungry!

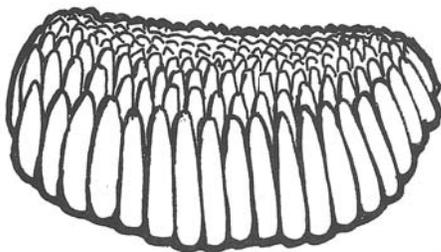
Marcy needs to bite in order to get blood.  
She needs blood so she can make eggs.

Mosquitoes grow in four stages.

First are the eggs, then the larva (sometimes called wriggler), then the pupa (also called the tumbler) and then the adult mosquito.

Color the pictures below to learn how mosquitoes grow.

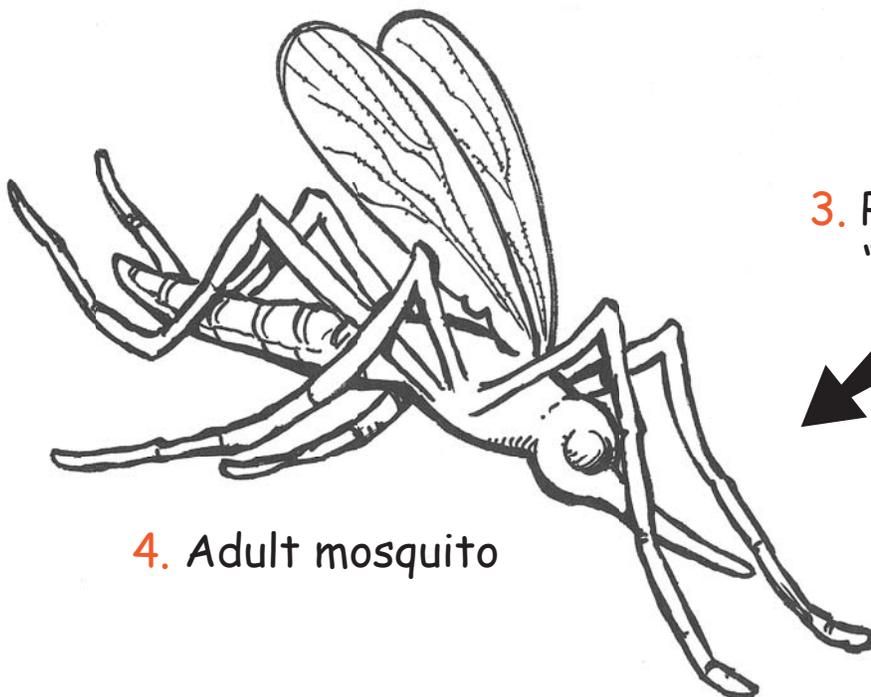
1. Mosquito eggs



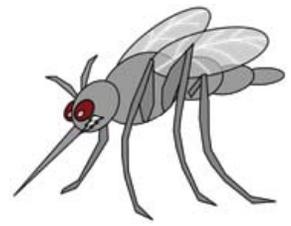
2. Larva  
"wiggler"



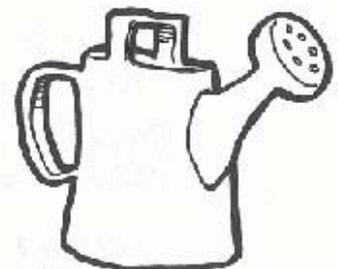
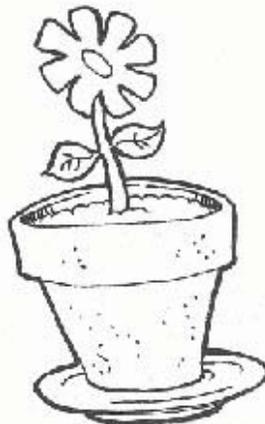
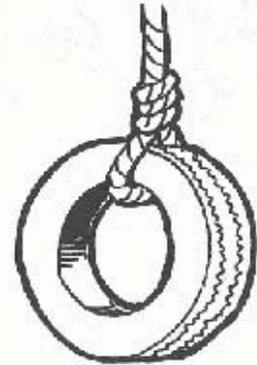
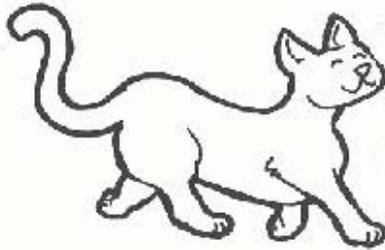
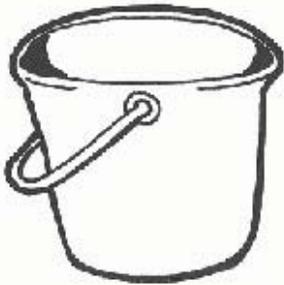
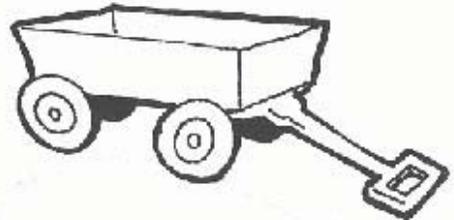
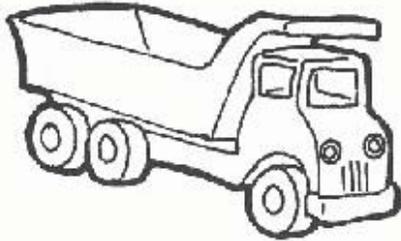
3. Pupa  
"tumbler"



4. Adult mosquito



Mosquitoes grow in water.  
Circle and color the things that can hold water.





You can protect yourself by letting your parents or teacher apply DEET on you and your clothes. Mosquitoes don't like DEET.



# Mosquito Smarts Word Search



Using the list of words below, find and circle each word in the puzzle. Words can be forward, backward, up, down or diagonal.

**Mosquito** -- an insect.

**Rain gutter** -- a place where mosquitoes can live.

**Pupa** -- third stage of the mosquito's life cycle.

**Water** -- needed for mosquitoes to grow.

**Larva** -- second stage of the mosquito's life cycle.

**Wings** -- mosquitoes have one pair of these.

**Bite** -- something that female mosquitoes do.

**Blood** -- needed for female mosquitoes to lay eggs.

**Pond** -- a place where mosquitoes can live.

**Goldfish** -- a fish that eats mosquitoes.

**Dragonfly** -- an insect that eats mosquitoes.

**Wiggler** -- another name for mosquito larvae.

**Tires** -- mosquitoes can live in these.

**Nectar** -- food for mosquitoes.

**West Nile** -- a virus transmitted by mosquitoes.

**Insect** -- a mosquito is one of these.

**Environment** -- mosquitoes provide helpful and harmful things to it.

**Diseases** -- these are transmitted by mosquitoes.

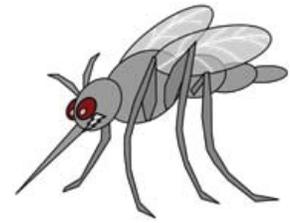
**Tumbler** -- another term for mosquito pupa.

**Containers** -- places holding water where mosquitoes live.

**Egg** -- first stage of the mosquitoes life cycle.

**Swamp** -- a place where mosquitoes live; has lots of water.





# Mosquito Smarts Word Scramble

See if you can unscramble these words about mosquitoes!

1. Mosquitoes grow in \_\_\_\_\_.

**ARTEW**

--	--	--	--	--

2. Another name for mosquito larvae.

**RGIWRLGE**

--	--	--	--	--	--	--	--

3. Female mosquitoes bite in order to feed on \_\_\_\_\_.

**OBODL**

--	--	--	--	--

4. Mosquitoes have one pair of \_\_\_\_\_.

**GSINW**

--	--	--	--	--

5. These are spread by mosquitoes.

**SEISDASE**

--	--	--	--	--	--	--	--

6. Mosquitoes begin their lives as \_\_\_\_\_.

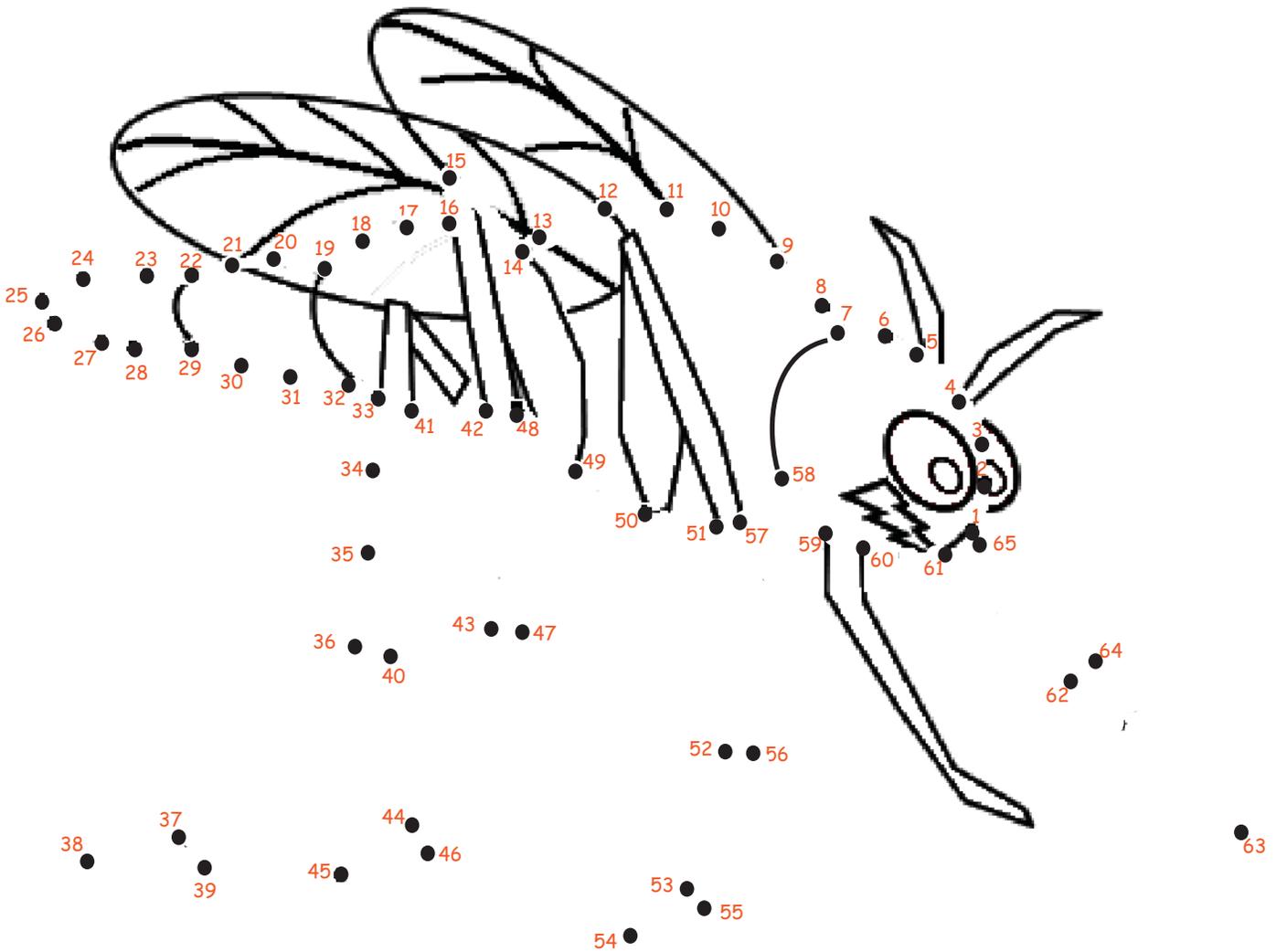
**GESG**

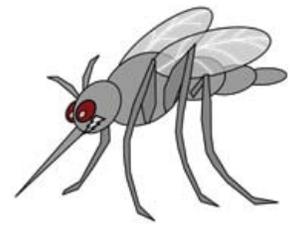
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Connect the dots to find out what bug carries West Nile virus.

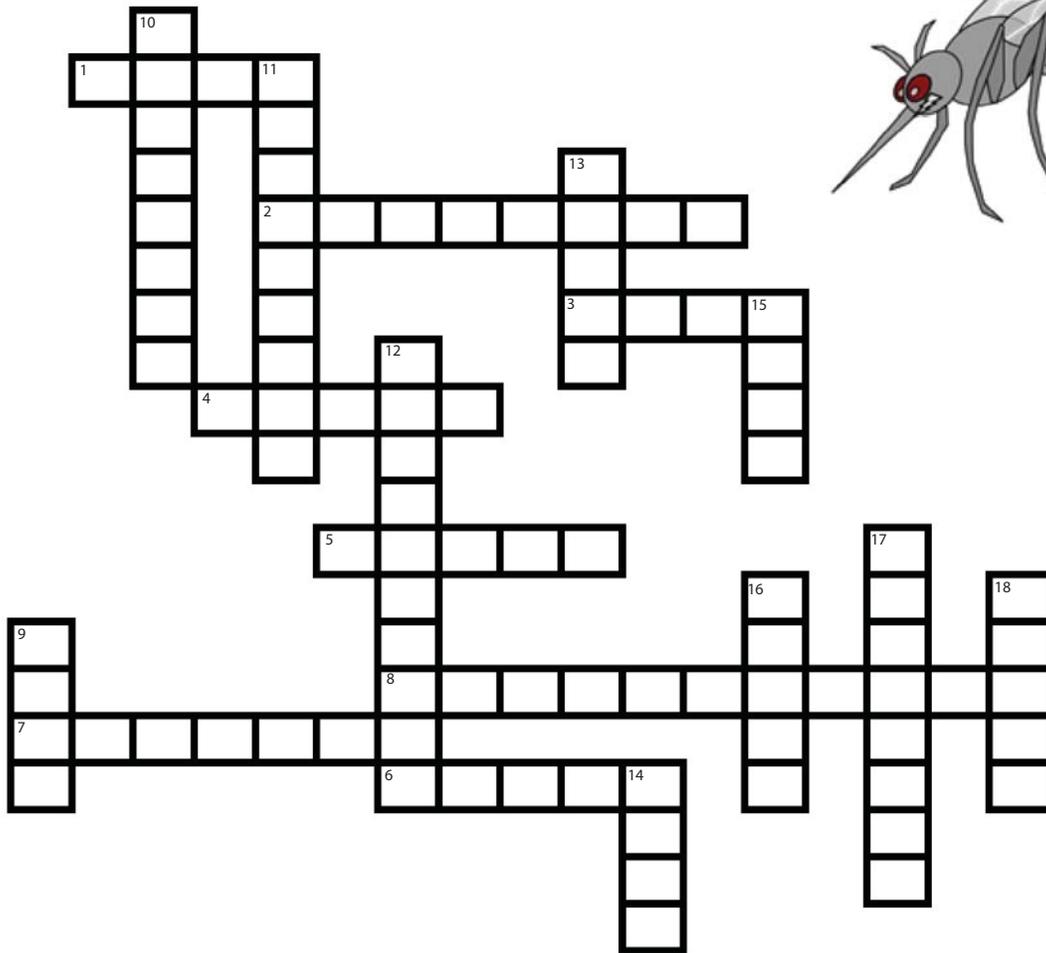




# Ten Questions About Mosquitoes and the West Nile Virus

- | T                        | F                        |   |
|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> | 1. You can get the West Nile virus from an infected mosquito.   |
| <input type="checkbox"/> | <input type="checkbox"/> | 2. Everyone who is bitten by a mosquito gets the West Nile virus.   |
| <input type="checkbox"/> | <input type="checkbox"/> | 3. If you get a mosquito bite, you should tell your parents or teacher.                                   |
| <input type="checkbox"/> | <input type="checkbox"/> | 4. Mosquitoes have seven life stages.   |
| <input type="checkbox"/> | <input type="checkbox"/> | 5. The West Nile virus cannot be spread by coughing or sneezing.  |
| <input type="checkbox"/> | <input type="checkbox"/> | 6. You can prevent the spread of the West Nile virus by controlling mosquitoes.                           |
| <input type="checkbox"/> | <input type="checkbox"/> | 7. Bug repellent containing DEET can help protect you from mosquito bites.                                |
| <input type="checkbox"/> | <input type="checkbox"/> | 8. Mosquitoes lay their eggs in water, so it is okay to leave water in wagons, flower pots and old tires. |
| <input type="checkbox"/> | <input type="checkbox"/> | 9. Most people do not die from the West Nile virus.   |
| <input type="checkbox"/> | <input type="checkbox"/> | 10. Male mosquitoes need blood to lay eggs.   |

# Mosquito Smarts Crossword Puzzle



## Across Clues:

1. A small body of water where mosquitoes live.
2. A type of fish that eats mosquitoes.
3. \_\_\_\_\_ are laid so that new mosquitoes can hatch.
4. Female mosquitoes need to feed on this in order to lay eggs.
5. The second stage of the mosquito life cycle.
6. Mosquitoes are harmful and helpful to the \_\_\_\_\_.
7. Another name for a mosquito pupa.
8. A wetland area where mosquitoes live.

## Down Clues:

9. Female mosquitoes do this in order to get blood to feed their eggs.
10. A type of insect that lives near water, can bite people and animals, and transmits diseases to humans.
11. A large insect that eats mosquitoes.
12. Mosquitoes can live and breed inside \_\_\_\_\_ such as buckets, cans, pots, etc.
13. Sometimes used as swings, scrap \_\_\_\_\_ are a perfect home for mosquitoes.
14. The third stage of a mosquito life cycle.
15. DEET should be washed from the skin with \_\_\_\_\_ and water.
16. Mosquitoes have one pair of \_\_\_\_\_.
17. \_\_\_\_\_ are spread by mosquitoes.
18. Mosquitoes lay their eggs on top of \_\_\_\_\_.

**Word Bank:** Soap, Mosquito, Pond, Water, Dragonfly, Eggs, Tumbler, Diseases, Bite, Pupa, Blood, Swamp, Containers, Goldfish, Wings, Environment, Larva, Tires



# Mosquito Smarts Home Patrol Checklist



These are some places you might find mosquitoes or mosquito larvae. With a parent or teacher, check around your yard, school or play area for the items on the list below.

Check the boxes as you go.

	We found these things:	Number found:	We checked for water and emptied these:	We did not find any of these things:
<b>Tires</b>				
<b>Toys</b>				
<b>Rain barrels</b>				
<b>Wheel barrows</b>				
<b>Flower pots</b>				
<b>Boats/boat covers</b>				
<b>Plastic covers</b>				
<b>Swimming pools</b>				
<b>Buckets</b>				
<b>Plants</b>				
<b>Cans and jars</b>				
<b>Bird baths</b>				
<b>Tree holes</b>				
<b>Rain buckets</b>				
<b>Pet dishes</b>				

Did you find mosquitoes in any other places that aren't on the list?

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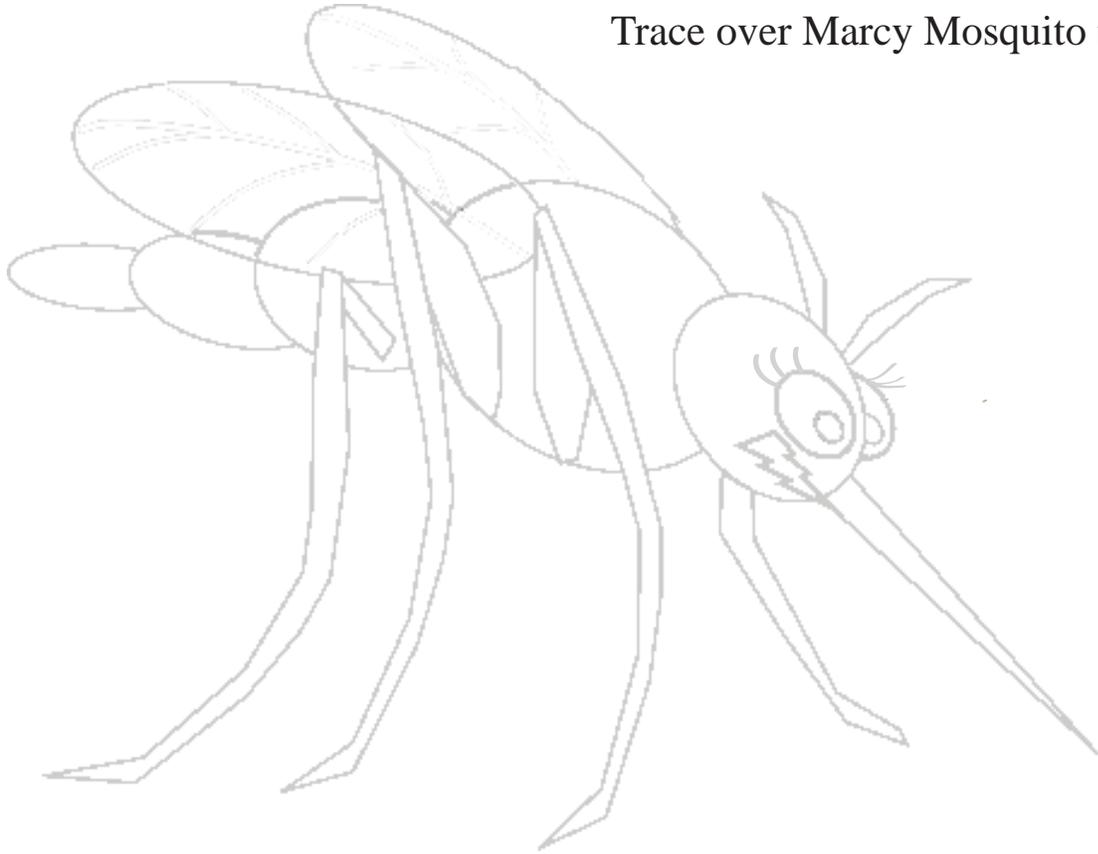
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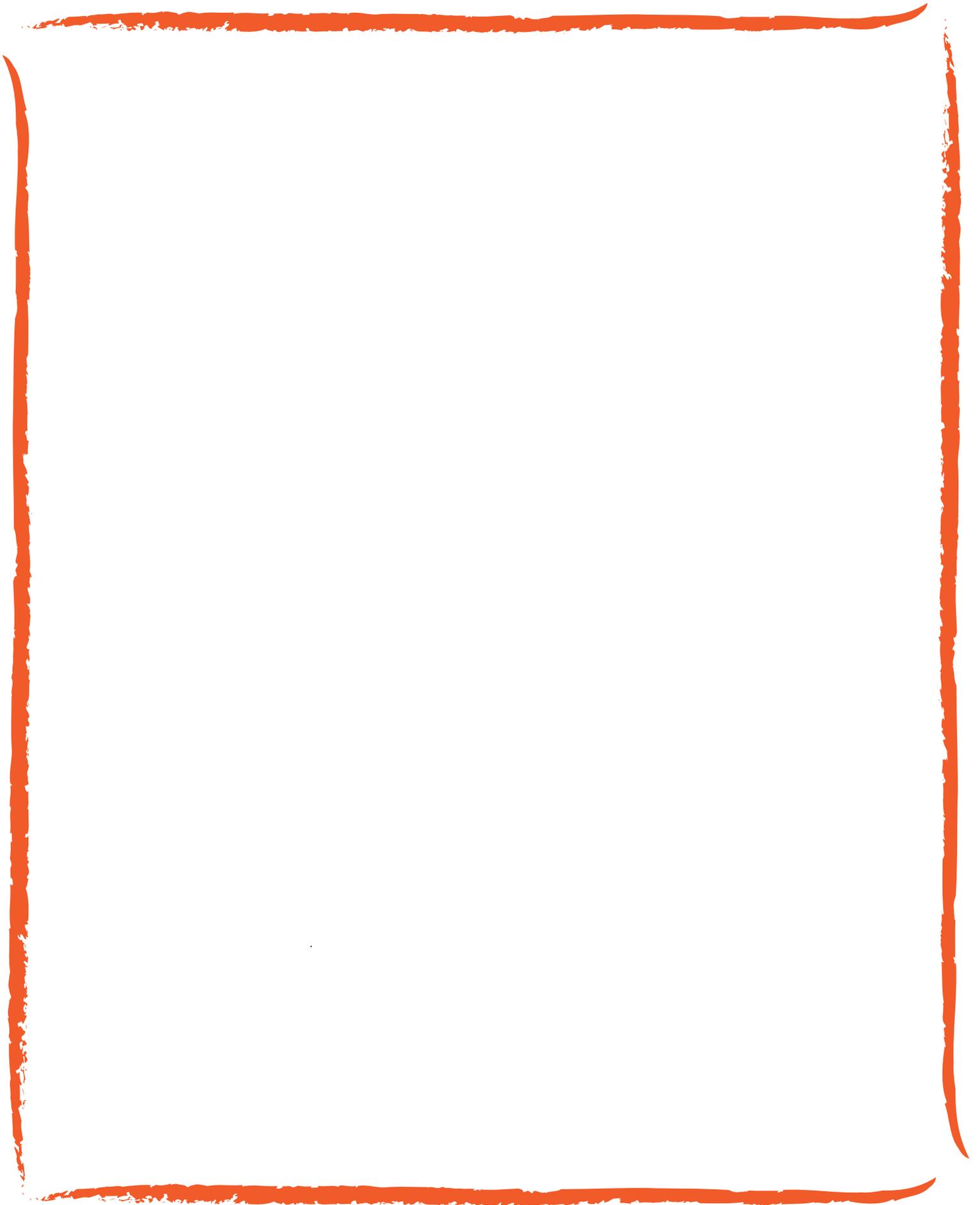
# Learn to Draw Marcy Mosquito

Trace over Marcy Mosquito to practice



Now draw her on your own below

Use this space to doodle



Page 3: Answers to what can hold water



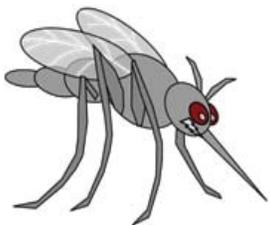
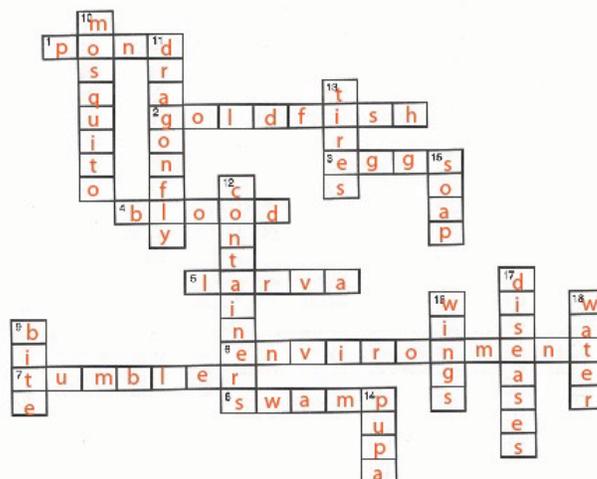
Page 5: Mosquito Smarts Word Search Answers

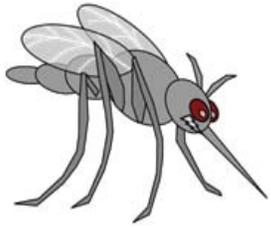


Page 6 word scramble answers:  
1 - water, 2 - wriggler, 3 - blood,  
4 - wings, 5 - diseases, 6 - eggs

Page 8 true and false answers:  
1-T, 2-F, 3-T, 4-F, 5-T,  
6-T, 7-T, 8-F, 9-T, 10-F

Page 9: Mosquito Smarts Crossword Puzzle Answers





Acknowledgements:

The concept and some materials for this educational activity book were adapted with permission from the South Dakota State University Cooperative Extension Service.

Photo on page 6 courtesy of the Centers for Disease Control and Prevention/James Gathany

**FOR MORE INFORMATION ABOUT WEST NILE VIRUS:**

Contact your local health department.

or call the North Dakota Department of Health at 800.472.2180.

**ADDITIONAL INFORMATION ABOUT WEST NILE VIRUS CAN  
BE FOUND AT:**

North Dakota Department of Health – West Nile Virus website

[www.ndhealth.gov/wnv](http://www.ndhealth.gov/wnv)

Centers for Disease Control and Prevention – West Nile virus website

<http://www.cdc.gov/ncidod/dvbid/westnile/index.htm>

United States Geological Survey (USGS) – West Nile virus maps

<http://diseasemaps.usgs.gov/>