Protect yourself against

West Nile

Educational Activity Book

NORTH Dakota Health

Be Legendary™
The purpose of this activity book is to help teach children about the disease West Nile virus (WNV), and how they can protect themselves, families and friends from WNV by preventing mosquito bites and reducing mosquito breeding around the home and play areas.

The following tips can help prevent West Nile virus:

- Use an insect repellent containing DEET, picaridin, IR3535, oil of lemon eucalyptus (PMD) or permethrin on clothes and/or exposed skin when outdoors. Always follow the directions on the label.
- Stay indoors during the evening and early morning hours when mosquitoes are most active.
- Wear light-colored, long pants and long-sleeved shirts.
- Install or repair screens on windows and doors.
- Empty standing water from buckets, birdbaths, wading pools, troughs and potted-plant drip trays at least once a week.

The North Dakota Department of Health thanks you for taking the time to complete this activity book.
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 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 “wriggler”
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.
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.

Wriggler -- 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 mosquito's life cycle.

Swamp -- a place where mosquitoes live; has lots of water.
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
Connect the dots to find out what bug carries West Nile virus.
I need to get through the maze so I can spray my friend with DEET so the mosquitoes will leave him alone. Can you get me through the maze to help my friend?
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. A wetland area where mosquitoes live.
7. Another name for a mosquito pupa.
8. Mosquitoes are harmful and helpful to the ________.

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
I am looking for mosquitoes. Marcy Mosquito can be found hiding in this picture 12 times. Sometimes she is big, sometimes she is small, and sometimes she is even upside down.
Playing outside and keeping active is still a good idea during the summer; you just need to protect yourself from mosquito bites.

Picture 1 is the original and Picture 2 has 12 mistakes. Can you find all of the differences?
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.

<table>
<thead>
<tr>
<th>Item</th>
<th>We found these things:</th>
<th>Number found:</th>
<th>We checked for water and emptied these:</th>
<th>We did not find any of these things:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tires</td>
<td></td>
<td></td>
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<tr>
<td>Toys</td>
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<tr>
<td>Rain barrels</td>
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<tr>
<td>Wheelbarrows</td>
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<tr>
<td>Flower pots</td>
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<tr>
<td>Boats/boat covers</td>
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<tr>
<td>Plastic covers</td>
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<tr>
<td>Swimming pools</td>
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<tr>
<td>Buckets</td>
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<td>Plants</td>
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<tr>
<td>Cans and jars</td>
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<tr>
<td>Birdbaths</td>
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<tr>
<td>Tree holes</td>
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<tr>
<td>Rain buckets</td>
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</tr>
<tr>
<td>Pet dishes</td>
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</tbody>
</table>

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

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________
Page 5: Mosquito Smarts Word Search Answers

K TIMES WAMP

INSECT LOP S L R G A

FOCK M F T C Q T A W R V T

FYKV Y ON A P UP I J R A C

LE R G C GD ON Z Y S A I E

F L E G T H O R G N W L M E R N

N O L E S X O L J G D P C R A Y

O G A C S T D M V P U Y I L R

O G N W G T OF S B N R E T A W

A I T N E U B Z Q I L E P O M K

R R I R D O O L B T S E F D V I

D W E S T N I L E E N H R L T U

Page 6: Word Scramble Answers
1 - water,
2 - wriggler,
3 - blood,
4 - wings,
5 - diseases,
6 - eggs

Page 8: Maze Answers
Help me out of the maze.

Page 11: Find the Differences Answers

Page 10: Find Marcy Answers

Page 9: Mosquito Smarts Crossword Puzzle Answers

Page 3: Answers to What Can Hold Water
FOR MORE INFORMATION ABOUT WEST NILE VIRUS

Contact your local public health unit
or call the North Dakota Department of Health at 800.472.2180.

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

ADDITIONAL INFORMATION ABOUT WEST NILE VIRUS CAN BE FOUND AT:

North Dakota Department of Health - West Nile virus website
www.ndhealth.gov/wnv

Centers for Disease Control and Prevention - West Nile virus website
www.cdc.gov/westnile

United States Geological Survey (USGS) - West Nile virus maps
diseasemaps.usgs.gov/wnv_us_human

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