

3<sup>RD</sup> TO 5<sup>TH</sup> GRADE WORKBOOK



name: \_\_\_\_\_ date: \_\_\_\_\_



GLOBAL LYME ALLIANCE  
Conquering Tick-borne Disease through Research & Education

[www.GLA.org](http://www.GLA.org)

# LYME DISEASE CURRICULUM

Teacher's Guide – 3rd to 5th Grade

Dear Teacher,

This program is flexibly designed to adjust to your class schedule. As a supplement, either print the student workbook or utilize the interactive version to accompany the curriculum. Peer guides, Gaby and Lenny, along with their robot A5, help students digest the material in a fun and interactive way.

Goal: To promote student knowledge and skills regarding tick identification, tick bite, Lyme disease, prevention, and necessary steps if a tick is found.

### OBJECTIVES:

1. Describe the transmission and course of Lyme disease and recognize its signs and symptoms.
2. Identify preventable measures for Lyme disease, i.e., proper dress, use of tick repellents, body check.
3. Emphasize the importance of telling a trusted adult as soon as a tick is discovered.



# Topics of Discussion — Teacher’s Key

## OBJECTIVE 1:

Describe the transmission and course of Lyme disease and recognize its signs and symptoms.

1. Lyme disease is transmitted by the “deer” tick also known as the Blacklegged tick.
2. Ticks climb onto groundcover, tall blades of grass or weeds (including beach grass) where they wait patiently for an animal or person to brush against them so they can climb on and find a warm, moist place to begin feeding.
3. Ticks have 4 stages of life: egg, larva, nymph and adult. During the larval, nymphal and adult stages, the tick takes a blood meal from an animal or person, molts and develops into the next stage of life. If the tick feeds on animals that are infected by Lyme bacteria, such as mice, rats, chipmunks or birds, the tick becomes infected and may infect the next animal or person it feeds on.
4. Larval and nymphal ticks on students may not be detectable by visual inspection. Therefore, additional emphasis must be placed on having individuals feel their skin for any bumps that might indicate a tick, especially on the scalp. If a bump is found, do not press or squeeze.
5. If not detected early, a tick will become engorged (filled with blood) as it feeds. If infected, a student may develop a rash that can take on many forms and appearances, including the classic bull’s-eye presentation. The rash may look like a bruise on dark-skinned people.
6. Many students do not get a rash at all, yet may be infected.
7. Transmission time varies from a short attachment time to a long attachment time, such as several days. The longer the tick is attached, the greater the chance of infection.
8. Early signs of infection: Flu-like symptoms, rash, joint pain, headaches, stiff neck, fatigue, fever and stomach aches.
9. Symptoms (at any stage of the disease) may include heart palpitations, speech difficulty, dizziness, numbness and tingling, and aching joints. Signs include partial facial paralysis, muscle spasms, motor tics, and swollen joints. Students might notice changes in cognitive function, attention, memory, sleeping patterns, and behavior (violent outbursts, irritability) and onset of psychiatric symptoms (obsessive compulsive disorder, anxiety, depression, psychosis, etc.). Symptoms may be present days, months or even years after a tick bite and may be intermittent.
10. You cannot catch Lyme disease from other people.

## OBJECTIVE 2:

Identify preventable measures for Lyme disease, i.e., proper dress, use of tick repellents, body check.

1. Blacklegged ticks may be carried by deer, mice, birds, squirrels, chipmunks (and other small mammals), dogs, cats and horses.
2. Students should wear light-colored clothing with long pants, and when possible, tuck pants into socks, wear long-sleeved shirts tucked into pants, and a hat. Children should follow these guidelines when playing in tick habitats. This will increase the visibility of a crawling tick.
3. Walk on cleared pathways. Avoid playing in areas where ticks thrive and wait patiently for an animal or person to brush against them, such as areas with tall grass (including beach grass), leaf litter, stonewalls and wood piles (where mice live that carry ticks), near bird feeders (birds carry ticks that may drop off near a bird feeder), and ground cover, such as pachysandra and honeysuckle (where small rodents carrying ticks live). Stone walls are frequented by rodents that can leave ticks behind, so it's important to be particularly careful in these areas.
4. Swing sets should be placed on well-mowed lawns in direct sunlight away from areas where ticks thrive.
5. Adults should supervise to ensure proper use of tick repellents, which contain DEET or permethrin. Do not put permethrin on the skin.
6. Advise students to have their parent or trusted adult help them do a tick check on themselves and their pets, daily and immediately after exposure to potential tick habitat. Ticks love to hide in warm, moist places, such as the groin, back of the knees, armpits, the back of the neck, navel and ears. But the ticks will feed anywhere on the body, so look carefully.

### OBJECTIVE 3:

Emphasize the importance of telling a trusted adult as soon as a tick is discovered.

1. If a student finds an attached tick, advise him/her as follows:

- a. Don't panic.
- b. Don't touch the tick or try to remove it yourself.
- c. Go to a trusted adult for proper tick removal with fine point tweezers.

**DO NOT remove with fingers!**

- d. Quick, early and proper removal of the tick may prevent Lyme disease.  
Always remember, if you find a tick, report it quick

2. Discuss proper tick removal:

- a. Use fine point tweezers and grasp the tick as close to the skin as possible and gently pull straight out. Improper removal increases risk of infection by causing regurgitation of the tick's stomach contents, which contain the bacteria that causes Lyme disease.
- b. Place tick in a zippered, plastic, sealed bag with a blade of grass or moist cotton and bring to your local health department or other private lab for testing, if they provide the service. It is important to keep the tick alive as live testing yields quicker results. (Visit the Global Lyme Alliance website [[www.GlobalLymeAlliance.org](http://www.GlobalLymeAlliance.org)] for information on where ticks can be taken for testing.)

## MATERIALS:

**Teacher Resources:** Lyme Disease Curriculum Teacher's Guide — 3rd Grade

**Handouts:** 3rd Grade Curriculum

## SUGGESTED VOLUNTEER ACTIVITIES:

### 1. Role Playing:

**Situation:** A group of friends are going on a hike. How should they prepare for the hike to prevent Lyme disease?

- a. Review proper dress.
- b. Review areas where ticks live.

### 2. Create a Lyme Disease Awareness Bulletin Board:

**Include four sections:**

- a. What ticks look like and where they live.
- b. Symptoms of Lyme disease.
- c. Proper dress to prevent tick bites.
- d. Animals that carry ticks (deer, mice, birds, chipmunks, squirrels, rabbits, etc.)

If the bulletin board is centrally located in the school, it will serve as an educational tool for all students.

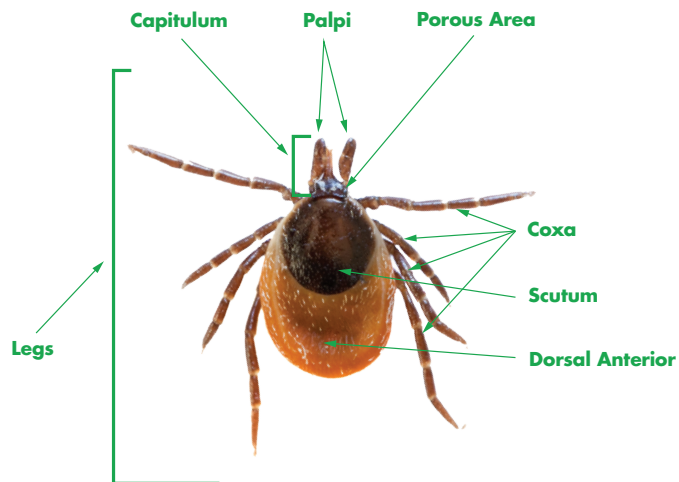
## WORKBOOK ANSWER KEY:

### Anatomy of a Tick

The body of a tick consists of a "false head" (the capitulum) and a single oval, flattened body. A larval tick has six legs, while nymphs and adults have eight legs like spiders and mites (insects have six legs).

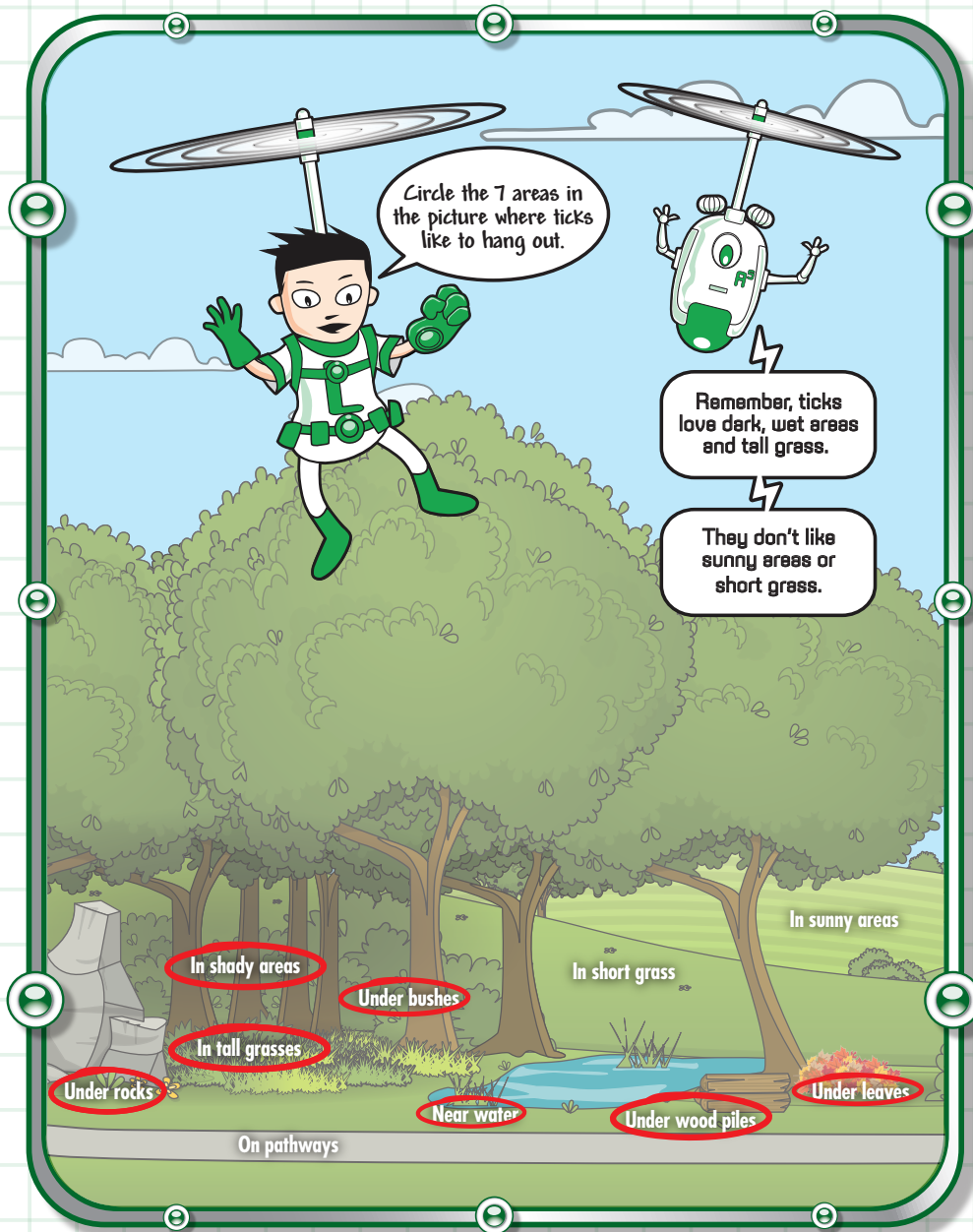
**Study the tick and its parts below - there will be a quiz on the next page!**

Female Ixodid Tick



**Fun Fact:** Ticks and insects are arthropods, but ticks are arachnids and not insects.

## WORKBOOK ANSWER KEY:





## WORKBOOK ANSWER KEY:

1. How do ticks get on people?

- a. They fly
- b. They jump
- c. They crawl onto them

2. What sickness can Blacklegged (deer) ticks give you?

- a. Chicken pox
- b. Measles
- c. Lyme disease

3. Where do ticks live?

- a. On fallen leaves
- b. On plants
- c. On grass
- d. All of the above

4. If you have Lyme disease, you may see a red rash on your skin.

- a. Yes
- b. No

5. What does a tick look like?

- a. A tiny spider
- b. A butterfly
- c. A bee



Ready for a fun review of what we've learned?

6. What are the 4 stages of a tick's life?



EGG



LARVA



NYMPH



ADULT

Actual tick size can be as small as a pencil point.

## WORKBOOK ANSWER KEY:

One day I was walking in the park. I saw a rabbit. It looked like a mound of dirt. A white-tailed deer ran off when I laughed out loud. A blue bird chirped in a tree. It looked like the color of the sky. A grey squirrel was busy burying a peanut. It was a fun day.

When I arrived home, my mother and I did a tick check. We did not find any ticks on me. I'm so glad that my mother helped me to remember to pull my socks up over my long pants. I'll wear long sleeves to protect my arms and to prevent a tick from biting me.

Can you fill the blanks with the correct words from the word bank below?

It's more fun than TICK tac toe!

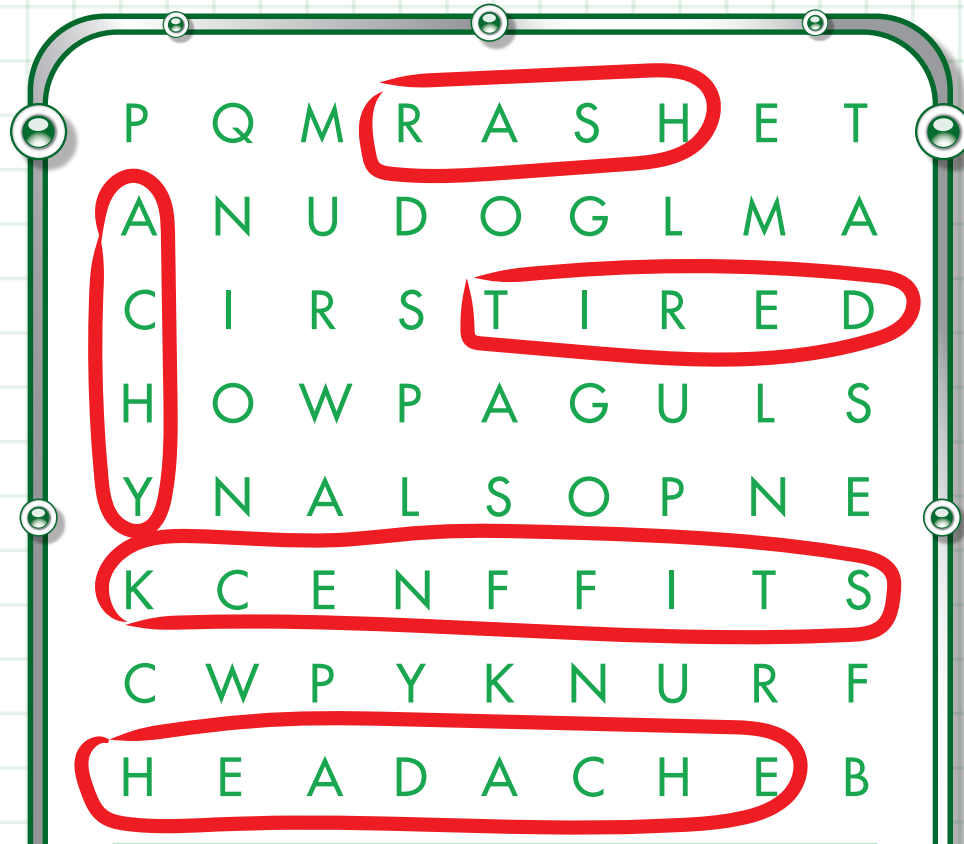
My jokes are getting worse.



### Word Bank

protect	grey
sleeves	socks
blue	check
prevent	white-tailed
pants	ticks

## WORKBOOK ANSWER KEY:



Can you find some of the early signs of Lyme disease in the word search?

**ACHY RASH HEADACHE  
STIFF NECK TIRED**

Tell an adult if you have any of these symptoms.



## WORKBOOK ANSWER KEY:

**ACROSS:**

1. A condition that Blacklegged (deer) ticks can cause.
2. Round, red area on the skin that could develop from a tick bite.
3. The third stage of a tick's life.
4. Small bug that could cause Lyme disease.

**DOWN:**

1. The second stage of a tick's life.
2. When you come in from playing outside, do a \_\_\_\_\_.
3. An animal that can carry the Blacklegged (deer) tick.
4. Ticks don't like \_\_\_\_\_ areas.

Let's do a crossword puzzle.

You can look back in your workbook for clues.

Sponsors for this educational curriculum: Mark and Deborah Blackman Charitable Trust, Newman's Own Foundation, The Allan B. and Frances G. Herzog Charitable Foundation, and The William Pitt Foundation

Check out our website for more information and activities!

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