



Lesson plan: Ticks and tick bite prevention

Grades 3 through 5

Expected time: One 20-minute lesson and three five- to 10-minute activities (about 45 minutes total)

Overview

Ticks and the diseases they spread are a growing public health concern. Most New Yorkers who get sick from a tick are infected when visiting grassy, wooded areas in upstate New York, Long Island and surrounding states. However, some people may get infected when spending time outdoors in NYC, particularly on Staten Island or in the Bronx.

This lesson will teach students about ticks and how to prevent tick bites. While ticks can make people sick, there are many things people can do to protect themselves. This lesson corresponds with concepts in the NYC Third Grade Science Scope and Sequence (2022). Relevant health education concepts for third through fifth grades are also listed. Educators are encouraged to build upon and adapt this lesson plan to their students' learning needs.

Learning Objectives

In this lesson, students will learn to:

- Describe and identify a tick.
- Describe the type of environment where ticks live.
- Describe how Lyme disease spreads to people.
- Identify ways to avoid ticks and prevent tick bites.
- Demonstrate how to do a tick check on themselves.
- Verbalize what to do if they find a tick on themselves.

Key Words

- Ticks
- Molt
- Larvae
- Nymph
- Host
- Infect
- Habitat
- Lyme disease
- Tick check
- Repellent

Materials

- PowerPoint presentation with presenter notes
- Tick bagels handout

- Tick Check Harry stuffed dog with fake ticks
- Tick Check Harry handout

NYC Prekindergarten Through Grade 8 Science Scope and Sequence

LS1.B: Growth and Development of Organisms

- Reproduction is essential to the continued existence of every kind of organism. Plants and animals have unique and diverse life cycles. (3-LS1-1)

LS3.B: Variation of Traits

- Different organisms vary in how they look and function because they have different inherited information. (3-LS3-1)
- The environment also affects the traits that an organism develops. (3-LS3-2)

LS4.C: Adaptation

- For any particular environment, some kinds of organisms survive well, some survive less well, and some cannot survive at all. (3-LS4-3)

To view the science and scope sequence, visit

weteachnyc.org/resources/collection/scope-and-sequence-science.

NYC Kindergarten Through Grade 5 Health Education Scope and Sequence

| | | |
|--------------|-----------|---|
| Third grade | 3-DP 1.1 | How germs enter the body and can cause illness. |
| | 3-DP 1.2 | Ways to prevent illness. |
| | 3-DP 5.1 | Use a decision-making process to reduce the risk of communicable disease or illness. |
| | 3-PHS 7.1 | Demonstrate safety and injury prevention practices and behaviors. |
| Fourth grade | 4-DP 3.1 | Demonstrate how to locate sources of accurate personal health and wellness information. |
| | 4-DP 5.1 | Describe the final outcome of a personal health and wellness-related decision. |
| | 4-DP 8.1 | Give factual information to improve the personal health and wellness of others. |
| | 4-DP 8.2 | Demonstrate how to persuade others to make positive health and wellness-related choices. |
| Fifth grade | 5-DP 5.1 | Apply a decision-making model to real-life health-related situations. |
| | 5-DP 7.1 | Identify at least three ways they will help protect their bodies against germs and disease. |
| | 5-DP 8.1 | Identify ways to support a friend's positive health behaviors. |

To view the science and scope sequence, visit weteachnyc.org/resources/collection/k-5-health-education-scope-and-sequence.

Preparation and Setup

1. Review the lesson's PowerPoint and accompanying notes. Click **View**, then **Notes** for instructions and a voiceover for each slide.
2. Set aside the tick bagels handout.
3. Attach fake ticks to the Tick Check Harry stuffed dogs. Set aside the Tick Check Harry handout.
4. Set up PowerPoint presentation. Refer to the presenter notes as a script for each slide.

Activities and Procedures

1. Use the PowerPoint to run through the lesson.
2. Have students break into groups of three or four depending on class size to work on activities.
3. **Slide 8 – Class activity: Tick bagels**
 - a. Distribute the tick bagels handout. Emphasize that students should not be afraid of nature or ticks, but that the size of ticks makes them very hard to see.
 - b. Ask students if they can tell the difference between poppy seeds and nymph ticks. Have students describe the difference in size between larvae, nymphs and adults. Consider using analogies like the size of poppy seed or sesame seed for reference.
 - c. Ask students to circle and count the number of ticks on their bagel. Note: The bagels should have five ticks each.
 - d. Ask the students if it was difficult to spot the ticks. Because ticks are so small, prevention is important. Let students know that you will be reviewing ways to help them prevent tick bites.
4. **Slide 18 – Class activity: Tick check**
 - a. After going over the slide, have students stand up and practice doing a tick check on themselves while you demonstrate.
 - b. Have everyone carefully inspect their bodies and feel for any odd bumps that might potentially be a tick. For classroom appropriateness, focus on exposed skin. Work carefully and slowly from top to bottom, starting with the hairline and checking in all joint areas and skin folds (Figure 1).
 - c. Tell students to check for ticks each time they come indoors after visiting places where ticks might live. Inform students that going to the bathroom or taking a shower or bath is a great time to check for ticks between their legs and other parts of their body.

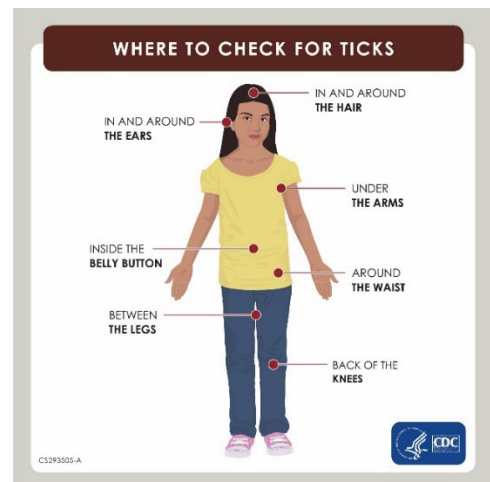


Figure 1. Where To Check for Ticks
Image source: Centers for Disease Control and Prevention

Some parts of their body may be hard to see, so ask a trusted adult for assistance if needed.

5. Slide 20 – Class activity: Tick Check Harry

- a. Explain the importance of also checking pets for ticks. Pets can get sick from tick-borne diseases too. They may also carry ticks home, which can then bite people.
- b. Explain how students will help check for ticks on Harry (Figure 2).
- c. Divide the class into groups. Pass out one handout per student and one dog per group. Groups of students who are not currently working with Tick Check Harry may individually work on the word match on the handout.
- d. Within each group:
 - i. Students should take turns gently running their hands through Harry's fur to find any ticks. Tell them to be gentle, as if Harry were a real dog.
 - ii. Students should circle on the handout where the ticks were found.
- e. Have students switch activities so that students previously working on the word match will now have a turn with Tick Check Harry.



Figure 2. Where To Check Your Pet for Ticks
Image source: Centers for Disease Control and Prevention

- 6. Congratulations and thank you for completing this lesson with your students!** Your feedback is extremely valuable. Let us know if you have any feedback by completing this anonymous evaluation through RedCAP (available at bit.ly/tick-lesson-feedback). If you receive any questions that you are unable to answer, contact zivdu@health.nyc.gov. For more information, visit nyc.gov/health/ticks.

Additional Resources

- NYC Health Department's Ticks webpage: nyc.gov/health/ticks
- New York State Department of Health's Proper Tick Removal video: youtube.com/watch?v=1Vj-qhxCJbA
- NYC Health Department's Tick Repellent video: youtube.com/watch?v=wnnJq8vs3U4
- NYC Health Department's Insect Repellent Safety webpage: nyc.gov/site/doh/health/health-topics/insect-repellent-safety.page
- Environmental Protection Agency's Repellent Search Tool: epa.gov/insect-repellents/find-repellent-right-you
- Centers for Disease Control and Prevention's Ticks webpage: cdc.gov/ticks/index.html