Articles and Questions

Each **free article** of ***What in the World?*** includes:   
  
1) a PDF file

*and*

2) a Word file

These files contain **only** the article and questions. They do **not** contain Answer Keys.

This **Word** file allows students to complete assignments using a computer either at school or at home. Teachers can assign all or parts of the file by email attachment or a school website. The **Word** file also allows teachers to:

• easily modify and format content including changing *fonts* and text sizes

• create a PDF document and use Adobe Reader's 'Read Out Loud Mode'

• save paper and copying costs and help protect the environment

• promote and encourage students’ computer skills

What Else Can You Do With The Word File?

#1) You can easily upload the file to Google Docs and share it with students or other teachers. **See how here:**

<https://support.google.com/drive/answer/2424368?hl=en>

#2) Translate the uploaded document into another language. (see **Tools>Translate document**).Google Docs will create a new copy of the original file but you will need to edit the document to suit your requirements. Google Docs can translate into over 100 languages including Spanish, Mandarin, German, etc. **See how here:**

<https://support.google.com/docs/answer/187189?hl=en&co=GENIE.Platform=Desktop>

**Ticked Off: Lyme Disease on the Rise**



It’s a great day for a walk along a woodland trail. As you stroll, tall grasses brush against your legs. You don’t know it but a hitchhiker is lurking there, waiting for you to pass.

**The icky, tricky tick**

That hitchhiker crawling inside your clothing? It’s a black-legged tick—a member of the **arachnid** family. These tiny creatures, about the size of a grain of sand, don’t jump or fly. They crawl. And they feed on the blood of animals, including humans.

The one clinging to you is seeking a dark place on your body. There, its mouth parts can latch on for a big, long slurp. The tick’s mouth is covered in hooks. These hooks let it burrow into your skin. Meanwhile, the creature produces a numbing **saliva** that prevents clotting, creating an inviting pool of blood. You won’t feel a thing as the tick **engorges**. So the animal can latch on for several days. It can swell to the size of a small grape before it falls off.

The problem? There’s a chance that the tick may be infected with a **bacterium** called Borrelia burgdorferi. If it stays on your body for 36 to 48 hours, it will transmit this bacterium to you. Now, you’re infected with Lyme disease—and that’s serious.

**A tough diagnosis**

If left untreated, Lyme disease can be devastating. It can cause heart issues, paralysis, mental confusion, or nervous system disorders. Even after treatment, some people suffer symptoms for months or years.

The good news? The illness responds to antibiotics. The bad news? It’s hard to diagnose. The symptoms—fatigue, fever, chills, headache, and muscle pain or weakness—resemble the flu. And people’s symptoms may vary. Some will have mild reactions soon after the bite. Others may experience severe symptoms, but not for several weeks.

To pin down a diagnosis, doctors look for evidence at the site of the bite—a bull’s-eye-like rash, a bruise or blistered skin. But these symptoms don’t always show up. So it helps to know if a person was bitten.

A lab test is a useful diagnostic tool. It can detect antibodies in a person’s blood that have been fighting the disease. But the test isn’t reliable in the early stages of the illness. So it can take many months and medical visits before a diagnosis is confirmed.

**On the uptick**

Lyme disease was once quite rare in Canada, but it’s increasing rapidly. Health professionals must report cases to the **Public Health Agency of Canada** (PHAC). Authorities then watch for patterns and track outbreaks.

The data reveals an alarming trend. In 2009, when the agency first started monitoring the illness, just 144 cases were reported. So far in 2025? Over 5200. And the number is likely higher because the condition is so hard to diagnose.

**Traveling north**

Ticks have infested the eastern United States for decades. Some 400,000 Americans get Lyme disease each year. Ticks can't survive harsh winters but temperatures are getting milder. As the climate warms, studies show that they are spreading north at a rate of 35 to 55 kilometres per year.

Canada is home to many species of ticks, but the “black‑legged” or “deer” tick is the most common Lyme carrier. Most are found in Ontario, Québec, and New Brunswick. Nova Scotia, too, has become a hotbed. Western black‑legged ticks are even present in British Columbia. In fact, the critters can now be found in the southern parts of every province. They turn up in other places too, often carried by migrating birds.

**An all-out response**

In response, federal and provincial agencies are working together to improve early identification. Rules on reportable cases were updated in 2024. PHAC also maintains risk maps showing where ticks are becoming established. As well, it is educating Canadians that ticks can be active if temperatures are above freezing. So prevention isn’t just a summertime issue.

Together, these steps help doctors recognize and report cases and make communities aware of growing Lyme risks.

Part of the response is the Pan-Canadian Lyme Disease Research Network. It was created in 2018 with $4 million from the Canadian Institutes of Health Research. The network aims to improve diagnosis, treatment, and prevention of Lyme disease.

“[It] will help advance the science of this disease and support the development of new tools, information, and resources to help Canadians and communities make informed decisions about their health,” says Dr. Theresa Tam, Canada’s chief public health officer.

**Playing your part**

The easiest way is to prevent Lyme disease is to protect yourself. Ticks wait on tall grasses, shrubs, or fallen leaves in woodlands. So when walking, hunting, fishing, or camping, your best bet is to deter the critters. Wear closed-toed shoes and long pants tucked into your socks, and a long-sleeved shirt tucked into your pants. Use a bug spray that contains DEET.

Have someone give you a scan now and then when you’re outside. That’s easier if you wear light clothing. Once inside, shower off any ticks and put clothing in a dryer for 15 minutes to kill any hiding in the fabric.

If you do find a tick, it will look like a tiny red or dark bump three to five millimetres long. Remove it quickly with clean tweezers. Grasp the head as close to the skin as possible, and pull straight out. If mouth parts remain, remove them, too. Wash the area with soap and water or rubbing alcohol.

If you can, photograph the tick or put it in a clean container. Record the date of the bite. The tick could confirm a Lyme diagnosis and reveal hot spots.

Ticks are a growing problem. But don’t stay inside and miss all the fun. Being tick-aware is the best way to stay safe.

**arachnid:** a type of small animal, similar to an insect, with eight legs and no antennae (e.g. spiders, scorpions, and ticks)

**bacterium:** a very tiny single-celled microorganism, with cell walls but no distinct nucleus that often causes disease (bacteria is the plural form of bacterium)

**engorge:** to fill a body part with liquid, especially blood, so it is swollen

**Public Health Agency of Canada:** federal agency that is responsible for public health, emergency preparedness and response, and infectious and chronic disease control and prevention

**saliva:** a liquid produced by glands in the mouth that helps with chewing and digesting food

**Comprehension Questions**

1. How many people in the U.S. contract Lyme disease each year?

2. How many people have been diagnosed in Canada this year?

3. How is this disease usually transmitted to humans?

4. What are the symptoms of Lyme disease?

5. How do doctors treat this disease in the early stages?

6. Describe what can happen if Lyme disease is left untreated.

7. Where are most blacklegged ticks located in Canada?

8. Explain why ticks are expanding their range.

9. List at least three ways that governments and organizations have mobilized to learn about and fight Lyme disease.

**Questions For Further Thought**

1. The Pan-Canadian Lyme Disease Research Network was created in 2018 with the goal of improving diagnosis, treatment, and prevention of the disease. As you see it, what kinds of data would be important to gather to better understand Lyme disease? Support your ideas with examples.

2. You’ve been invited to a friend’s cottage for the weekend. How might your packing list change with what you’ve learned about ticks in this article? Explain.

**Questions For On Line Exploration**

*Note:* The links below are listed at **www.lesplan.com/links** for easy access.

1. Find out more about the symptoms of Lyme disease and hear from a young man and his personal experience: **https://www.cbc.ca/kidsnews/post/ontario-kids-lyme-disease-story-shows-importance-of-checking-for-ticks**

What did you learn?

2. Listen to an infectious disease expert about how to deal with ticks and Lyme disease:  
**https://www.cbc.ca/player/play/audio/9.6856472** [8:23] (podcast)

What questions do you have?

3. The tick population is moving further north into southern regions of Canada. Find out where they are and why:   
**https://www.cbc.ca/player/play/video/9.6855567** [0:00 - 4:09]  
**https://www.cbc.ca/news/health/tick-prevention-canada-1.7596902**

4. Explore how the Public Health Agency of Canada is monitoring Lyme disease across Canada:  
**https://www.canada.ca/en/public-health/services/diseases/lyme-disease/surveillance-lyme-disease.html   
https://www.canada.ca/en/public-health/services/diseases/lyme-disease.html**

What information did you learn about your province or territory?

5. Check out this infographic summary of Lyme disease in Canada:  
**https://www.canada.ca/content/dam/phac-aspc/documents/services/publications/diseases-conditions/lyme-disease-surveillance-canada-infographic-2022/lyme-disease-surveillance-canada-infographic-2022.pdf**

What key points stood out for you?

6. Learn more about the possibility of a human vaccine against Lyme disease:  
**https://www.cbc.ca/news/canada/nova-scotia/vaccine-lyme-disease-1.7550778** [2:37]

7. A number of celebrities have suffered from Lyme disease. Read more about their experience:  
**https://www.cbc.ca/player/play/video/9.6855975** [2:04]

**Putting It All Together**

**A. Write the letter that corresponds to the best answer on the line beside each question:**

\_\_\_\_\_\_ 1. **When it feeds, a tick produces saliva that:** a) kills white blood cells b) creates a rash  
 c) prevents clotting d) causes nerve damage

\_\_\_\_\_\_ 2. **What do doctors use to treat Lyme disease?** a) antibiotics b) radiation therapy  
 c) CAT scan d) acupuncture

\_\_\_\_\_\_ 3. **How many people in Canada have contracted Lyme disease so far this year?** a) over 700 b) over 5000  
 c) over 250,000 d) over 400,000

**B.** Mark the statements **T** (**True**) or **F** (**False**). If a statement is **True**, write one important fact to support it on the line below. If a statement is **False**, write the words that make it true on the line below.

\_\_\_\_\_\_ 4. **True** or **False?** Lyme disease is easily diagnosed and treated.

\_\_\_\_\_\_ 5. **True** or **False?** It is safest to wear dark clothing when walking in areas where ticks are located.

\_\_\_\_\_\_ 6. **True** or **False?** Black-legged ticks are steadily expanding their range.

**C. Fill in the blanks to complete each sentence.**

7. PHAC = Public \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Agency of Canada.

8. A tick's mouth is covered in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ .

9. If you find a tick feeding, it’s best to remove it with clean \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ .

**D. Respond to the following question in paragraph form. *(Use a separate sheet of paper if necessary.)***

10. ***People should remain indoors during the summer months to avoid ticks.*** Do you agree or disagree with this statement? Give reasons to support your response.

**Assessment Rubric**

This rubric may be helpful in providing students with formative, strength-based feedback and/or assessing students’ responses holistically. This easy-to-modify activity is included in the doc file which you can download from:   
**www.lesplan.com/subscribers**

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|  | **Emerging** | **Developing** | **Proficient** | **Extending** |
| **Supports thinking** | Answers or reflections are brief and include obvious facts/details/ evidence. | Answers or reflections are general and supported with some relevant facts/details/evidence. | Answers or reflections are clearly supported with specific, relevant facts/details/evidence. | Answers or reflections are insightful and supported with specific, relevant facts/details/evidence. |
| **Shows understanding** | Responses show a basic understanding of the text, topic, issue or message. | Responses are thoughtful and show a general understanding of the text, topic, issue or message. | Responses are thoughtful and show a complete understanding of the text, topic, issue or message. | Responses are insightful and show a deep understanding the text, topic, issue or message. May synthesize ideas or explain the ‘so what’. |
| **Thinks  critically** | Makes straightforward connections or inferences. Focuses on retelling. | Makes logical connections to self (T:S) and/or background knowledge (T:S). Inferences are logical | Makes meaningful connections to self. Considers ideas between texts (T:T).  Inferences are plausible. | Makes powerful connections that go between texts and/or beyond the text (T:W).  Inferences are plausible and insightful. |

