

ELA: Grade 8, Lesson 11, Parasites

Lesson Focus: The lesson will focus on the concept of parasites and hosts, providing students with a text and organizing framework that will help them gather information relevant to that concept.

Practice Focus: Students will glean and make sense of information from a challenging scientific text and begin to organize that information in a way that helps them consolidate their knowledge.

Objective: Students will use the text “Top 10 Real-Life Body Snatchers” and the organizing framework of a Venn diagram to build and consolidate knowledge of parasites and hosts in nature.

Academic Vocabulary: parasite, host [focus words]; alter, sophisticated, manipulate [review words]

TN Standards: 8.RI.KID.1, 8.RI.KID.3, 8.RI.CS.4

Teacher Materials:

- The Teacher Packet for ELA, Grade 8, Lesson 11
- Chart paper (will need to have Venn diagram drawn on chart paper and ready to display)

Student Materials:

- Two pieces of paper, a pencil, and a surface to write on
- The Student Packet for ELA, Grade 8, Lesson 11 which can be found on www.tn.gov/education

Note 1: small portions of the source text have been omitted from this lesson in preparing it to air on public television.

Note 2: teachers delivering this lesson will want to make sure they are comfortable saying the scientific term *Toxoplasma gondii* beforehand!

Teacher Do	Students Do
<p>Opening (1 min)</p> <p>Hello! Welcome to Tennessee’s At Home Learning Series for literacy! Today’s lesson is for all our 8th graders out there, though everyone is welcome to tune in. This lesson is the first in this week’s series.</p> <p>My name is ____ and I’m a ____ grade teacher in Tennessee schools. I’m so excited to be your teacher for this lesson! Welcome to my virtual classroom!</p> <p>If you didn’t see our previous lesson, you can find it on www.tn.gov/education. You can still tune in to today’s lesson if you haven’t seen any of our others.</p> <p>Today we will be learning about parasites: real-life body snatchers! [Show Slide 1]</p> <p>Before we get started, to participate fully in our lesson today, you will need:</p> <ul style="list-style-type: none"> • Two pieces of paper, a pencil, and a surface to write on • The Student Packet for ELA, Grade 8, Lesson 11 which can be found on www.tn.gov/education <p>[Pause.] Ok, let’s begin!</p>	<p>Students gather materials for the lesson and prepare to engage with the lesson’s content.</p>

<p>Intro (1 min)</p> <p>This week we are reading a scientific text called “Top 10 Real-Life Body Snatchers”! [Show Slide 2.] Today’s focus will be on the text’s introduction and key concepts; then, over the next four lessons, we’ll make our way through the entire text. Along the way, we’ll be gathering important information from the text and working to organize that information in ways that make sense to us.</p> <p>Each lesson will begin with a section in which I do more of the reading and talking, but by the end of the lesson you’ll be the one doing most of the thinking. Let’s get started!</p>	<p>Students prepare to follow the gradual-release trajectory, understanding that they will be doing more listening at first and more “doing” toward the end of the lesson.</p> <p>Students understand the entire week will focus on a single text and prepare to make sense of the information they’ll find in that text.</p>
<p>Teacher Model/Read-Aloud (8 min)</p> <p>The first thing we need to understand about the text is its title: “Top 10 Real-Life Body Snatchers.” Historically, body snatchers were people who stole dead bodies from graves in order to study or sell them. Those aren’t the kinds of body snatchers we’re reading about today, though. Our text is about parasites, not people. So the text is using “body-snatcher” as a metaphor for parasites—describing them by comparing them indirectly to body snatchers. We’ll come back to that idea.</p> <p>You know what parasites are. [Show Slide 3.] Have you ever been bitten by a mosquito? [Pause.] Mosquitos bite you in order to take your blood, right? [Pause.] And when they do that, the bite often gets itchy, but otherwise it usually doesn’t hurt us, because mosquitos take so little of our blood compared to what we have. When mosquitos take our blood, they are acting as parasites: living things that survive by using or hurting other living things, which we call their hosts. Let’s repeat that because it will be an important concept this week. Parasites are living things that survive by using other animals as a “host.” Yes, that’s “host,” like when you have guests in your home. Parasites are guests you don’t want in your body!</p> <p>So when we “host” a mosquito we’re annoyed, but we’re not really hurt. However, some parasites do some crazy things to their hosts, as we’ll see in this text.</p> <p>Let me show you one thing before we dig in. [Show Slide 4.] You’re probably familiar with Venn diagrams like this one, right? [Display the Venn diagram on chart paper.]</p> <p>This Venn diagram shows some of the things parasites do when they infect their hosts. Some change body features, some use chemicals and venoms, some lay eggs in their</p>	<p>Students understand the meanings of body-snatcher, parasite, and host, activating prior knowledge of parasites and hosts in preparation for learning more about those topics.</p> <p>Students recall the structure of a Venn diagram, review how to use one, and understand how the</p>

<p>hosts, and many do a combination of two or even all three of these things.</p> <p>As we read about ten different parasites this week, we're going to be sorting them into the various sections of this Venn diagram. For example, if we read about a parasite that uses venom and changes body features but does not lay eggs, we'll put it in this upper left section where the circles overlap [Point to diagram.] to show it is in the "chemicals and venoms" and "changing body features" circles but not in the "laying eggs" circle. If we read about a parasite that changes body features, uses chemicals or venoms, <i>and</i> lays eggs, we'd write its name in the very center. [Point to diagram.] You get the point.</p> <p>Take a minute now to draw this Venn diagram on your own paper. Make sure it's big enough that you'll be able to write several parasites' names in each of the sections. [Pause.]</p> <p>Okay, great. Now hold on to that diagram—that's what's going to help us keep track of all the new information we get about parasites and hosts this week!</p>	<p>week's lessons will help them complete a Venn diagram about parasites and their similarities and differences.</p> <p>Students draw a Venn diagram on their paper.</p>
<p>Guided Practice (18 min)</p> <p>All right, now we're ready to read. Here we go."</p> <p>[Show Slide 5] "Top 10 Real-Life Body Snatchers</p> <p>"To ensure their own survival, parasites alter"—that means change—"the appearance and behavior of their hosts in the creepiest ways. For instance, rats carrying the parasitic protozoan <i>Toxoplasma gondii</i>, which reproduces inside the gut of a cat, no longer fear the smell of cat urine. In fact, they are attracted to the scent, according to a recent study." That is kind of disgusting, isn't it! The paragraph concludes: "This way, infected rats walk right into the grips of a feline."</p> <p>Okay, so it sounds like parasites can alter, or change, two things about their hosts: their appearance and their behavior." Let's think back to that mosquito: do mosquitos alter their hosts' appearance?" [Pause.]</p> <p>Well, their bites can make your skin red and bumpy, so I guess they can alter our appearance, if only a little bit!</p> <p>The rest of that paragraph I read was about a case in which a parasite changes its host's behavior rather than its appearance. Do you remember how? Let's go back and read it once more to find out.</p>	<p>Students follow along as the teacher reads, listening for comprehension and to answer questions as asked. They understand parasites can alter their hosts' appearance or behavior and that <i>Toxoplasma gondii</i> is an example of a parasite that can alter its host's behavior in a way dangerous to the host. They also prepare to encounter the many scientific names that appear throughout the remainder of the text.</p>

“For instance, rats carrying the parasitic protozoan *Toxoplasma gondii*, which reproduces inside the gut of a cat, no longer fear the smell of cat urine. In fact, they are attracted to the scent, according to a recent study. This way, infected rats walk right into the grips of a feline.”

First, do you remember what that word “feline” means?
[Pause.] Yep, that’s right: it’s just another word for “cat.”

But whoa: “the parasitic protozoan *Toxoplasma gondii*” is a bit much, isn’t it? So let’s break it down. We know it’s a parasite: something that’s parasitic. A protozoan is a type of living thing you may have learned about in science class, and “*Toxoplasma gondii*” is its scientific name. We’ll be hearing a lot of scientific names like that in this text. Don’t worry about “understanding” them; just know that they’re names scientists use to refer to different species. Sometimes we non-scientists have different names for the same species: for example, what we call dogs, scientists often call *Canis familiaris*. But let’s take a minute now to write down that term *Toxoplasma gondii*, just so you have it for reference throughout the rest of the lesson. [Pause and display term for students to copy.]

Okay, back to the text. So “rats carrying the parasitic protozoan *Toxoplasma gondii*, which reproduces inside the gut of a cat, no longer fear the smell of cat urine. In fact, they are attracted to the scent, according to a recent study.” So rats are usually afraid of cats, and if they smell cat urine they’ll run the other way, right? But what does a rat do if it’s infected with *Toxoplasma gondii*? [Pause.]

That’s right—it actually runs toward cats! That doesn’t seem like a very good idea if you’re a rat, does it? But somehow the parasite inside the rat makes it do this thing it would otherwise never do: put itself in danger by running toward something that probably wants to eat it! That’s a pretty powerful little parasite, isn’t it? It’s certainly a good thing mosquitos don’t have the power to make us run around putting ourselves in danger.

Okay, so that’s just the text’s introduction—a teaser to get us started. The text goes on to say, “Here are ten other parasites whose sophisticated manipulations of animals are more horrifying than fiction.” Sophisticated manipulations—it sounds like the rest of the text is going to show us some pretty complicated ways in which parasites alter their hosts’ appearance or behavior.

<p>Now, I wonder what some of those sophisticated manipulations might be. We've come across some clues already, haven't we? For one thing, we heard parasites tend to alter, or change, two aspects of their hosts: appearance and behavior. I already know about mosquitos and about those protozoa that live in rats—what were they called again? [Pause for students to say it.] Yes, <i>Toxoplasma gondii</i>! But I think I can expect to learn about parasites that alter their hosts' appearance and behavior in other ways—maybe making their hosts look entirely different from usual rather than just a bit red and bumpy, or making them do other crazy things like running right into the jaws of a cat who wants to eat them!</p> <p>I also expect to learn about parasites that fit into the three circles in our Venn diagram, since that's the way we're going to be organizing the information we get from the text. But I wonder whether there are also parasites out there that don't fit into any of these circles--and if so, I wonder what it is they do to their hosts to survive! After all, I know from the example of the rat's <i>Toxoplasma gondii</i> that parasites can be incredibly powerful—so powerful they can control the behavior of hosts much larger than they are!</p> <p>Finally, I honestly wondered how gross the text is going to be! That last line of the text we read called the things these ten parasites do “more horrifying than fiction”—and I don't know about you, but I've read some pretty horrifying fiction. I'm also remembering the very first sentence of the text said that parasites work “in the creepiest ways.” So I'm going to make sure I'm ready to hear about some creepy and horrifying things over the next few days.</p>	
<p>Independent Work (1 min) [Show Slide 6.] All right, so today was all about getting ready to learn a whole lot about parasites and what they do to their hosts. Before I let you go, I want to return to a point I promised we'd return to earlier in the lesson. Remember the text's title and the historical meaning of body snatchers? The text is about parasites like <i>Toxoplasma gondii</i>, not about people robbing graves of dead bodies. So why do you think the author titled the text “Top 10 Real-Life Body Snatchers?”</p> <p>That's the question I want you to answer for independent work today. Take a minute to write it down so you don't forget: Why did the author title a text about parasites, “Top 10 Real-Life Body Snatchers”? [Pause.]</p>	<p>Students will respond to a writing prompt that synthesizes their knowledge from today's lesson.</p>

PBS Lesson Series

Closing (1 min)	
------------------------	--

[Show Slide 7] Thank you. I enjoyed learning about parasites and their hosts with you today! Thank you for inviting me into your home. I look forward to seeing you in our next lesson in Tennessee's At Home Learning Series! Bye!	
--	--

English Language Arts Guidebook Units by the Louisiana Department of Education and LearnZillion is licensed under a Creative Commons Attribution 4.0 International License.