

## **Sick!**

Aimee Webb, Michael Amodio, Janel Chatraw, Molly Embree, Susan Sumrall, and Angela Wade

### **Sick!: Scene 1**

Shelby and her college roommate, Twanda, head to Target after lunch to purchase the last of the items they need to finish decorating their dorm room.

While deciding on matching comforters for their bed, Shelby suddenly feels very dizzy and has painful abdominal cramping. She tells Twanda to pick out a comforter while she's in the restroom. She gets sick in the bathroom with watery diarrhea.

After washing her hands she heads back to the main section of the store and finds Twanda at the checkout.

Shelby says, "We've got to get home. I'm really sick. "

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## **Sick!: Scene 2**

On the painful drive back to their dorm, Shelby told Twanda, “I wonder if it is something I ate at lunch.”

When they got back to their dorm room, Shelby checked her phone messages. Carly, her best friend from high school, who is attending Georgia Southern University, has left her a message: “Hey Shelb, hope everything’s going well there and that you’ve got your dorm room decorated. I haven’t been able to decorate mine yet. I’ve been way too sick. Call me.”

Two days later, Shelby is still sick and at the urgings of her roommate, goes to GSU’s student health services center. She complains to the doctor that she is extremely tired and is having bad diarrhea. These are the doctor’s notes from Shelby’s medical chart:

**Temperature:** 98.5  
**Blood pressure:** 120/80  
**Heart rate:** 85 beats per minute  
**Skin:** cool hands and feet, eyes appear slightly sunken, skin has reduced elasticity, dry mouth  
**Age:** 18 years  
**Sex:** Female

**Notes:** Patient complains of dry mouth, fatigue, and watery diarrhea (more than 10 episodes a day). Patient says disease onset occurred 2 days ago after eating lunch in the university cafeteria. Patient has eaten all meals at the university cafeteria since arriving on campus on Monday for the start of the fall semester. On the day of disease onset, she had eggs and toast for breakfast with coffee and approximately 2 tablespoons of coffeemate. For lunch she consumed tuna fish salad over lettuce, French fries with ketchup, a chocolate yogurt from the frozen yogurt machine, and a diet Sprite. She has consumed brothy soups, scrambled eggs, crackers and diet Sprite and ginger ale since onset of diarrhea.

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### **Sick!: Scene 3**

*Doctor's notes, continued*

**Notes:** To date, no other students at GSU have presented with similar symptoms. Patient spent the week before school started, hiking the Appalachian Trail between Amicalola Falls and Blood Mountain with a high school environmental science club. She remembers drinking unfiltered water from a spring while on the trip.

**Recommendations:** Take a stool sample; admittance to hospital for IV fluids and monitoring.

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## **Sick!: Scene 4**

*The following Monday...*

It has come to the attention of Shelby's doctor that Carly and three other high school friends who went on the same trip are sick with similar symptoms. They all admit to drinking water from the same spring without filtering it.

The doctor notifies the CDC that a possible waterborne outbreak has occurred. The doctor suspects it may be pathogenic. The CDC sends investigators to gather samples from the spring.

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## **Sick!: Water Analysis Lab**

Back at the CDC laboratories, you and your team of investigators have received the water samples obtained from the suspected source of disease contamination.

Please follow all proper procedures for working with water samples and microscopes. Use your **Microscope Observations** handouts and **Table of Characteristics for Viruses, Bacteria and Protists** to help organize your observations.

---

Name \_\_\_\_\_

Date \_\_\_\_\_

### **Description of Sample:**

*Water sample from spring on Appalachian Trail between  
Amicalola Falls and Blood Mountain.*

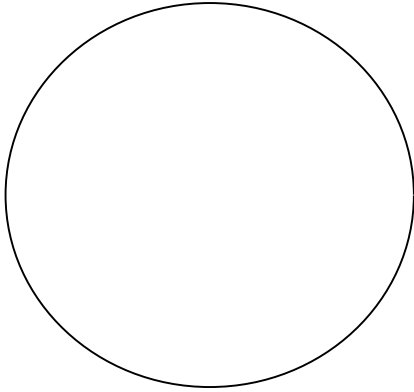
### **Procedure**

1. Prepare a wet mount (slide) of the water sample collected from the spring. Use an eyedropper to suck up the sample water and place one drop on the slide and then cover with a plastic cover slip.
2. Use a compound microscope to observe what is in the drop of water. If no protozoa are found after looking for several minutes, prepare a new slide.
3. Draw what you observe on the **Microscope Observations** sheets.
4. Identify the organisms you observed using the **Taxonomic Key**.
5. Research the organisms you observed and fill in the required characteristics for each one on the **Microscope Observations** sheets.

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## Water Analysis Lab: Microscope Observations

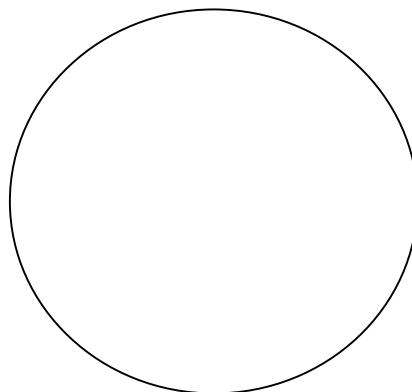


Organism \_\_\_\_\_  
Kingdom \_\_\_\_\_  
How does it move? \_\_\_\_\_

How does it eat? \_\_\_\_\_

Is it associated with any diseases? If so,  
name them \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

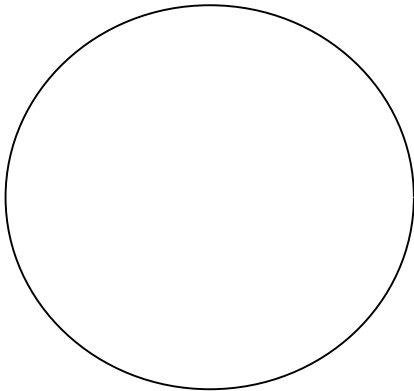


Organism \_\_\_\_\_  
Kingdom \_\_\_\_\_  
How does it move? \_\_\_\_\_

How does it eat? \_\_\_\_\_

Is it associated with any diseases? If so,  
name them \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

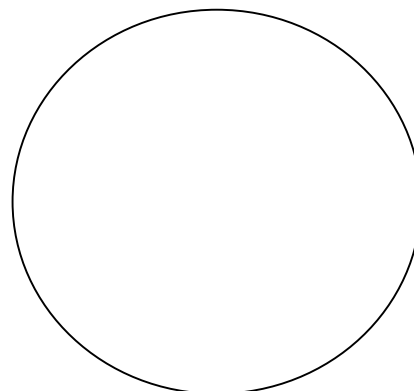


Organism \_\_\_\_\_  
Kingdom \_\_\_\_\_  
How does it move? \_\_\_\_\_

How does it eat? \_\_\_\_\_

Is it associated with any diseases? If so,  
name them \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_



Organism \_\_\_\_\_  
Kingdom \_\_\_\_\_  
How does it move? \_\_\_\_\_

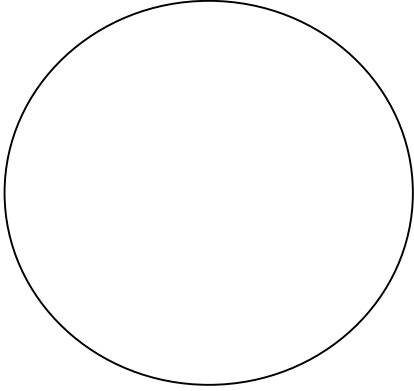
How does it eat? \_\_\_\_\_

Is it associated with any diseases? If so,  
name them \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

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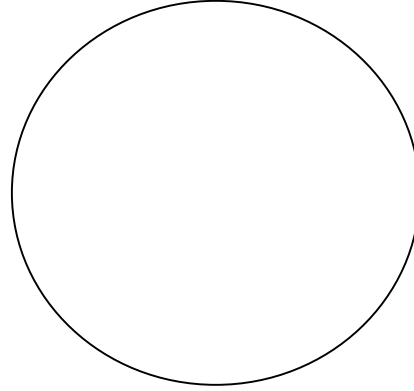


Organism \_\_\_\_\_  
Kingdom \_\_\_\_\_  
How does it move? \_\_\_\_\_

How does it eat? \_\_\_\_\_

Is it associated with any diseases? If so,  
name them \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

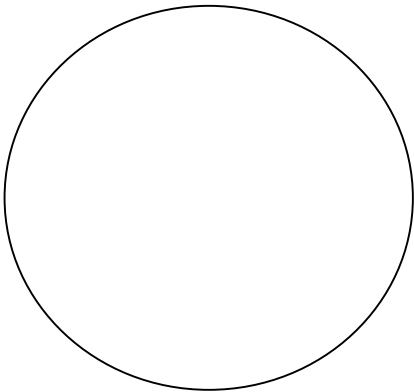


Organism \_\_\_\_\_  
Kingdom \_\_\_\_\_  
How does it move? \_\_\_\_\_

How does it eat? \_\_\_\_\_

Is it associated with any diseases? If so,  
name them \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

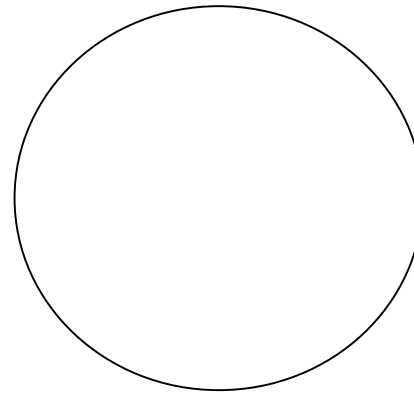


Organism \_\_\_\_\_  
Kingdom \_\_\_\_\_  
How does it move? \_\_\_\_\_

How does it eat? \_\_\_\_\_

Is it associated with any diseases? If so,  
name them \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_



Organism \_\_\_\_\_  
Kingdom \_\_\_\_\_  
How does it move? \_\_\_\_\_

How does it eat? \_\_\_\_\_

Is it associated with any diseases? If so,  
name them \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

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**Taxonomic Key: A Table of Characteristics of Viruses, Bacteria, & Protists**

	<b>Viruses</b>	<b>Bacteria</b>	<b>Protists</b>
Single-cellular, Multi-cellular Or Neither			
Prokaryotic, Eukaryotic or Neither			
Shapes (names & descriptions) and /or Types (names and descriptions)			
How do they reproduce?			
How do they get food?			
How do they move?			
How can they be harmful to other organisms?			
How can they be beneficial to other organisms??			
Specifically, how do they make other living things sick?			
How do doctors treat infections with these organisms?			



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**Sick!: Scene 5**

Shelby's condition is worsening and the doctor needs to know the pathogenic organism so that he can prescribe the correct medication. A member of your group has isolated a suspicious organism under the microscope and has prepared a photograph for you to use. One of your classmates remembers seeing a picture of this organism in their textbook:



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## **Sick!: Scene 6**

Shelby's stool sample report is ready. This is an abbreviated version of her report from the parasitology lab:

**Parasitology Lab of Georgia, Incorporated**  
*1703 Clifton Rd*  
*Atlanta, GA*

<b><i>Patient Name:</i></b>	Shelby Holden
<b><i>Referring Physician:</i></b>	Dr. Pamala Malaky
<b><i>Stool Appearance:</i></b>	Pale and greasy, soft
<b><i>Blood culture:</i></b>	Negative
<b><i>Source of specimen:</i></b>	Preserved
<b><i>Examination Requested:</i></b>	Stool ova and parasites/giardia EIA
<b><i>Results:</i></b>	<i>Giardia lamblia</i> cysts

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### Sick!: Scene 7

The doctor is grateful for your help in identifying the cause of Shelby's illness. All of the other students from the high school hiking trip who drank from the spring, including Carly, tested positive for *Giardia*. Because of your great work together, the CDC has asked your team to create a series of information pamphlets about waterborne diseases in the United States.

Each member of the team will create a pamphlet on one of the following diseases:

- *E. coli*
- *Giardia*
- Cryptosporidia
- Rotavirus
- Shigellosis
- Hepatitis A
- Campylobacteriosis

The pamphlet should include:

- information about the organism
  - identification as bacteria, virus, or protist
  - where it is found
  - how it moves
  - how/what it eats
  - other interesting characteristics
- a picture or drawing
- symptoms of infection
- treatment for infection
- frequency of infection (incidence) in the U.S.
- how to prevent infection