

## CHAPTER INVESTIGATION

# Observing Normal and Diseased Tissue

## Teacher Notes

**TIME** 45 minutes

### TEACHER PREPARATION



### STUDENT DIFFICULTY



**Purpose** Compare healthy and diseased tissue by examining them under a microscope

**Overview** Students will use the low power and high power of a microscope to examine a slide of healthy tissue and a slide of the same kind of tissue, but diseased. Students will then

- draw the cells they see
- examine and draw two more kinds of healthy and diseased tissues
- compare healthy and diseased tissues
- draw conclusions about how each of the diseased tissues is affected by pathogens

### LAB PREPARATION

- Obtain slides in advance from a biological supply company.
- Provide some content background about the diseases represented in the slides of diseased tissues or allow students time to search for information.

**Lab Management** Remind students to wash their hands at the end of the lab.

**Teacher Note** "Excellent hands-on activity for lower-level learners."

**Inclusion** For students, who lack fine motor skills, focus the microscope or have a team member focus it for them. For students who have visual disabilities, have team members describe what they see or make enlarged pictures of the tissues available.

**Post-Lab Discussion** Discuss results. **Ask**, What could you add to this investigation to learn more about the effects of pathogens on these tissues?  
*examine slides at different stages of the disease*

Observing Normal and Diseased Tissue *continued*

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**ANSWERS**

**Analyze and Conclude**

1. Answers should include a visual description and comparison of the healthy and diseased slides.
2. The diseased tissues all had cells which looked damaged, discolored, or deformed in some way.
3. Students' answers should demonstrate an understanding that pathogens take resources from the cells, thus damaging and destroying them.
4. Answers will vary, depending on the tissues chosen.

CHAPTER INVESTIGATION

# Observing Normal and Diseased Tissue

In this lab, you will examine different cells and tissues under the microscope and compare the appearance of normal tissue to that of diseased tissue.

## PROBLEM

How do diseased tissues differ from normal ones?

## MATERIALS

- slide of normal lung tissue
- slide of diseased lung tissue (lung cancer )
- slide of normal red blood and white cells
- slide of diseased blood cells (leukemia)

## PROCESS SKILLS

- Observing
- Analyzing

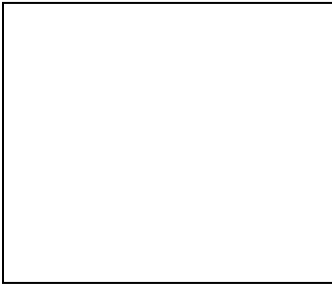
## PROCEDURE

1. Choose one slide at a time to observe from the tray.
2. Examine each slide under low power and high power on the microscope. Draw the cells that you see on the observations page. Label as many structures as you can (such as the membrane, nucleus, cytoplasm, etc.)
3. Record any differences in your observations such as color, shape, size on the lines provided under each slide observation.

**Observing Normal and Diseased Tissue** *continued*

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**Normal lung tissue:**



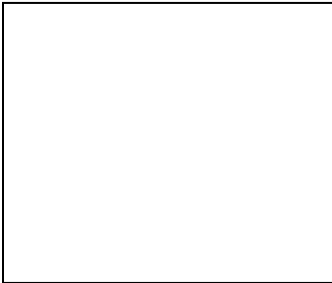
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**Diseased lung tissue:**



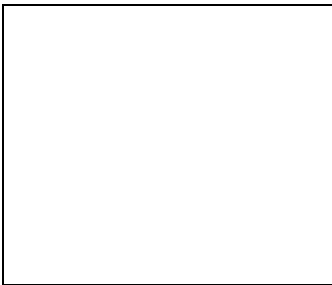
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**Normal blood cells:**



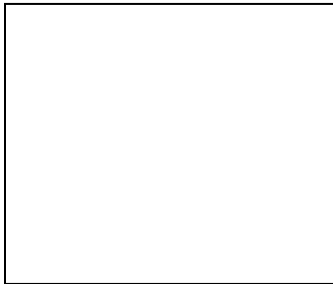
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**Diseased blood cells:**



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Observing Normal and Diseased Tissue *continued*

**Analyze and Conclude**

**1. Contrast** How do each of the diseased tissues you observed differ from the normal tissues?

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**2. Compare** What do the diseased tissues have in common with one another?

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**3. Infer** Using what you know about pathogens, why do you think a tissue's appearance changes when it is infected?

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**4. Infer** Using what you know about the function of each tissue, how do you think each of the diseased tissues is affected by the pathogen?

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