

Lesson #4

Grades

1 and 2

Suggested Pacing

20+ min

Group Size

Teacher Led

Individual



Lesson Slides

<https://tinyurl.com/2k8575ka>

What You Need

From Lysol® Minilabs Module #1:

- **30 Student Journals**

From Lysol® Minilabs Module #2:

- **6 Red “Microbe Scanner lenses”**
- **30 Lab Reports**
- **30 Take-home activities**

Optional Sourced Materials:

- **Paper, Scissors, Tape, Markers, Popsicle sticks, Straws**
- **Print-outs of Microbe Scanner Template (for an optional extension activity)**

Digital Only Option

If you don't have the physical Lysol® Minilabs Science Kit, check out the “Digital Kit Implementation Guide” at the end of this lesson plan with links to free printables and list of materials you need to source.

Bad Microbes and Illnesses

Overview

This lesson has two essential parts: **(1) Read Together: Chapter 4 of a graphic novel that introduces students to our bodies' immune systems, antibodies, and ways our bodies fight bad germs when they find their way in and (2) A Hands-On Activity for students to look for microbes inside the body of a patient while using an interactive “Microbe Scanner.”** In addition, you may implement some of the optional extensions and the optional section, titled, “Check Understanding.”

Session Planning

- Lesson Difficulty: **If you are teaching early readers/non-readers, we recommend you to implement “Beginner” level for the Hands-On Activity. For more advanced classrooms, you may implement more advanced discussion points provided.**
- Time Management: **If you have 20-30min, we recommend focusing on “Read Together” and limit the amount of time for customization of their Microbe Scanner outlined in the “Hands-On Activity” section of the lesson.**

Learning Goals

- **Comprehend the steps our immune systems take in order to fight bad microbes in our bodies.**
- **Understand how antibodies are created from white blood cells and how they fight infections and diseases in our bodies.**
- **Use tools to do scientific investigations.**
- **Learn how colored lenses absorb different wavelengths of light, affect how we see the world, and change what we can see.**

Key Vocabulary

- Scientific Tool: **Microbe Scanner**
- Science Concepts: **Antigen, Antibody, Immune System**
- Science Practices: **Observe, Compare, Investigate, Describe, Collect Data, Report, Ask Questions**

Standards

- **NGSS** 1-PS4-3 1-PS4-4. **NHES** 1.2.1, 1.2.3, 1.2.4, 2.2.1, 4.2.2. **CCSS.ELA-Literacy** W.1.2 W.1.7 W.1.8 SL.1.1 MP.5 RI.1.10 W.2.7 W.2.8 SL.2.5. **TEKS** S.1.1.A, S.1.1.B, S.1.1.D, S.1.1.E, S.1.1.F, S.1.3.C, S.2.1.A, S.2.1.B, S.2.1.D, S.2.1.E, S.2.1.F, S.2.3.C



Getting Ready



- Please review the student-facing slides, and get them ready to project on your classroom board. Please note that you may make a copy of the slides and edit based on your classroom's needs.
- Have copies of student Minilabs Journals ready to pass along to students. Thirty (30) copies have been provided in your Lysol® Minilabs Science Module #1.
- Have lab reports and colored acetate sheets (a.k.a. “Microbe Scanner Lenses”) ready to pass along to students. Provided in your Lysol® Minilabs Science Module #2 are: thirty (30) lab reports and six (6) red acetate sheets. Please use a pair of scissors to cut the red sheets into smaller pieces and pass along one piece to each of your students.
- Have copies of the “Take Home” activity ready to pass out to students. Thirty (30) copies have been provided in your Lysol® Minilabs Science Module #2. Find Spanish translations here: <https://tinyurl.com/2dvj8zaa>

Start Your Lesson

Suggested Time: 10min

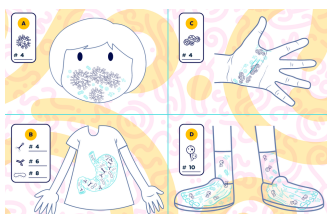
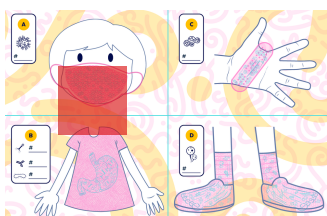
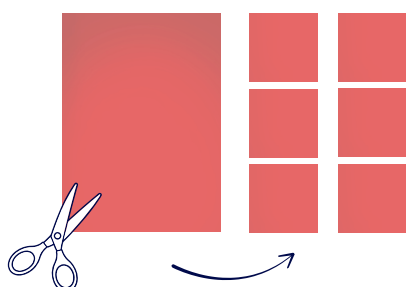
Modification:

A teacher and two students may read the story aloud, each voicing a different character: Wibbly White, Stomach Bug & Narrator. The narrator reads yellow and blue text bubbles, plus red rod-shaped microbe's text.

- Give one Minilabs Journal to each of your students.
- READ TOGETHER: Read through Chapter 4 of the graphic novel shown on the lesson slides. Students can follow along on pages 43-51 of their Minilabs Journal.

Hands-On Activity

Suggested Time: 10 to 20min



- Give each of your students one (1) lab report provided in your Lysol® Minilabs Science Module #2. On the back of the lab report, you'll find the "medical film" which students will "scan" as part of the activity.
- Give each of your students one (1) small piece of the red acetate sheet (a.k.a. Microbe Scanner Lens).
- Once all students have their materials, they should flip their lab report over to see the "medical film." Students can look at the body through their Microbe Scanner Lens. By looking through the red lens, students will be able to find microbes and antibodies.
- Ask students to identify and count the number of microbes and antibodies found in each part of the patient's body using the red lens. They should report their findings by writing down the number for each microbe and/or antibody.
- Advanced Level: You may ask more advanced students to go through Microbe ID Cards (pages 10 to 16 of their Minilabs Journal) and identify the microbes by their names.
- Once students are done scanning the microbes, ask them to flip to the other side of the activity sheet to add their name as the "examiner name", give their patient a name, and mark their recommendations for their patient!

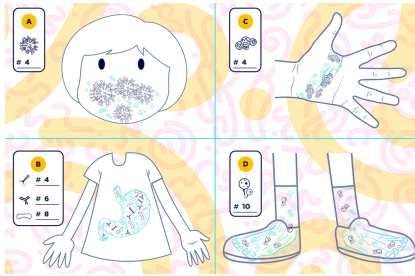
Answer Key

Selective Immune System facts:

- Your immune system recognizes and fights off germs that can make you sick.
- White blood cells circulating throughout your body are known as lymphocytes. These white blood cells are on the lookout for threats that could make you sick, like bacteria, viruses, toxins, or fungi.
- Your immune system also helps you build up immunity, or protection, against some viruses. Once it has learned to fight off a certain virus, it often remembers how to do it again.
- Vaccines work by giving your immune system instructions on how to fight off a virus, protecting you from getting severely ill.

Answer key # of microbes: From top to bottom

- Found in: **Mouth/Face**
 - # of bad microbes: **4**
- Found in: **Hand/Cut/Scrape**
 - # of bad microbes: **4**
- Found in: **Stomach**
 - # of good microbes: **4**
 - # of antibodies: **6**
 - # of bad microbes: **8**
- Found in: **Feet/Shoes**
 - # of bad microbes: **10**



Answer Key Lab Repot:

- A) To bust bad microbes in their mouth: **Brush teeth**
- B) To bust bad microbes in their stomach: **Eat yogurt & wash fruits and vegetables before eating**
- C) To bust bad microbes on their scratch: **Wash hands**
- D) To bust bad microbes on their feet: **Shower, clip toe nails, and keep shoes clean**

LAB REPORT

Examiner Name: [Student Name Here]

Patient Name: [Invented Name for Patient Here]

Mark your recommendations for the patient:

A To bust bad microbes in their mouth:

☒
☒
☒

C To bust bad microbes on their scratch:

☒
☒
☒

B To bust bad microbes in their stomach:

☒
☒
☒

D To bust bad microbes on their feet:

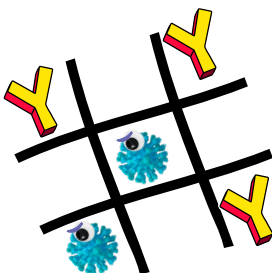
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Optional Extensions



Science Behind It:

Transmission of Light: Colored acetate sheets are transparent materials that filter light. They allow certain wavelengths of light to pass through while absorbing others. For example, a red acetate sheet allows red light to pass through and absorbs most other wavelengths (like blue and green). When you place the red sheet on the patterned “medical film”, the red light passes through and makes red things blend in with the background, making them seem to disappear because there’s no contrast between the red light and the red pattern. When the red pattern “disappears” you can see the blue “hidden” items underneath.



- (15-20min activity) **MAKE YOUR OWN CUSTOMIZED MICROBE SCANNER AND MEDICAL FILM**
 - **Print out the microbe scanner template (<https://tinyurl.com/2vv73xw5>) and hand out one to each student alongside the red acetate sheet.**
 - If you are not able to print the template: **Ask students to make their own Microbe Scanner using sourced materials and the colored acetate sheets. They can make them into glasses, a box with colored sheets glued on one side, or a hand-held device. The possibilities are endless!**
 - **Invite your students to test their new Microbe Scanner on the activity sheet and/or make their own medical film using crayons or markers: use a red color to make patterns on top of hidden microbes drawn with a blue marker.**
 - **Optionally, you may ask your students to engage in a “how-to” writing project. They can write a sequence of instructions on how to make a device like theirs or how to use their device.**
- (15-20min activity) **WRITE & SHARE: Ask students to individually write about a time they were sick. They may also create audio recordings and/or draw. They should answer the following questions when writing about their experience:**
 - **Why do they think they got sick?**
 - **How did they feel?**
 - **What did their body do to get rid of the sickness?**
 - **What are they doing to prevent getting sick like that again?**
- (20-30min activity) **GAME DESIGN: Create a tic-tac-toe game with Ys (for antibodies) and Os (for infections and microbes) instead of using Xs and Os.**

Check Understanding

Suggested Time: 5 - 10min



- **MULTIPLE CHOICE:** Go through the multiple choice questions from the slide deck to check your students' understanding. These questions were designed to reinforce their learning.
- **REFLECT TOGETHER:** Optionally, you may review definition of keywords with your students, challenge them to define the words, or draw a diagram in their journal (Appendix) to further define their meaning.

Take Home Activity

Suggested Time: 10 - 30min



- **CREATE & PLAY:** In your Lysol® Minilabs Module #2, there are thirty (30) copies of "Take Home" sheets with a Microbe Finger Puppets. Give each student one (1) sheet to take home and complete with their grownups, encouraging them to share what they are learning at school, reflect, and engage with the hands-on activity.

Lesson Glossary

Below is a glossary of all keywords covered in Lesson #4. Please note that students can go to the Appendix of their Minilabs Journals to check out the glossary.

ANTIGEN

Tiny toxic particles that bad microbes produce, leading to production of antibodies.

ANTIBODY

Y-shaped proteins that white blood cells produce to fight bad microbes!

IMMUNE SYSTEM

Our bodies' defense against infections caused by microbes.



Digital Kit Implementation Guide

If you don't have the physical box, you can still implement the Lysol® Minilabs Science Kit! Here are links to free printables and a list of materials you need to source.



FREE PRINTABLES

Lab Report Activity Sheet

<https://tinyurl.com/mx4d38us>

Lab Report Answer Key

<https://tinyurl.com/2ha6zaxm>

Take Home Activity - Finger Puppets

English: <https://tinyurl.com/yyvrk9zn>

Spanish: <https://tinyurl.com/2dvj8zaa>

Chapter 4 Only

<https://tinyurl.com/mwa5d9ud>

Optional: Microbe Scanner Template

<https://tinyurl.com/2vv73xw5>



MATERIALS TO SOURCE

- **Red acetate sheets or cellophane**
- **Paper** (Optional)
- **Scissors** (Optional)
- **Tape** (Optional)
- **Markers** (Optional)
- **Popsicle sticks** (Optional)
- **Straws** (Optional)

Check out page 7 for all the Online Resources for this lesson.



Online Resources



SLIDES: LESSON #4

<https://tinyurl.com/2k8575ka>



SCHOOL-HOME COMMUNICATION PACK

<https://tinyurl.com/3j5j5w8m>



VIDEO: READ & WATCH CHAPTER 4

<https://tinyurl.com/mfsfrmr6>

VIDEO: TAKE HOME ACTIVITY HOW-TO

<https://tinyurl.com/yckyke5k>



E-BOOK: CHAPTER 4 ONLY

<https://tinyurl.com/rdfm2wy9>



PRINTABLE: LAB REPORT ACTIVITY SHEET

<https://tinyurl.com/mx4d38us>

PRINTABLE: LAB REPORT ANSWER KEY

<https://tinyurl.com/2ha6zaxm>

PRINTABLE: TAKE HOME ACTIVITY - FINGER PUPPETS

English: <https://tinyurl.com/yyvrk9zn>

Spanish: <https://tinyurl.com/2dvj8zaa>

PRINTABLE: CHAPTER 4 ONLY

<https://tinyurl.com/mwa5d9ud>

OPTIONAL PRINTABLE: MICROBE SCANNER TEMPLATE

<https://tinyurl.com/2vv73xw5>

