



The Case of the Invisible Invaders



Prep **10** minutes



Activity **30** minutes



Grades **K-2**

OBJECTIVE:

To introduce students to the idea that microscopic creatures called microbes, or germs, can cause illness.

MATERIALS:

- *The Case of the Invisible Invaders* Handout
- Computer with internet access
- Paper and drawing supplies

EDUCATION STANDARDS:

Health: 1.2.3 Describe ways to prevent communicable diseases.

Science: A.2.c Simple instruments, such as magnifiers, thermometers, and rulers, provide more information than scientists obtain using only their senses.

INSTRUCTIONS

1. Have students read *The Case of the Invisible Invaders* handout.
2. Ask students to name some things that they know are there, even though they can't see them, such as air. Then, ask them to explain what evidence indicates these things exist even though they can't see them.
3. Invite students to examine an area, such as a countertop or their desks, that is frequently touched by hands. Ask them if the area looks clean. Have them draw what they see on their handouts, and then discuss their observations.
4. Show students a microscope image of a microbe:
 - www.xtalent.com.au/gallery/index.php (search for bacteria)
 - www5.pbrc.hawaii.edu/microangela/index.html
 - www.ebiomedia.com/BioGalleries/Living-Bacteria-Through-The-Microscope.html
5. Ask students to describe what they see and to guess what it might be.
6. Explain that microbes, or germs, are living creatures that are so tiny you have to use a microscope to see them. Point out that the image they are looking at was taken with a microscope, making it hundreds of times larger than the actual microbe. Clarify that these microbes could be all over the area they just examined, but couldn't be seen. If possible, show students a microscope and allow them to look through it.
7. Show students additional images of microbes and discuss how some, like intestinal bacteria, are helpful and can cause us to get sick.
8. Have students complete the handout by drawing what they saw with their eyes and under the microscope. Then, have them complete the *Case Report* describing what they learned about germs.
9. On a separate paper, have students draw a cartoon to teach someone else about microbes, or germs.



Interactive Whiteboard Extension

1. Create a T-chart labeled "Friend" and "Germ."
2. Post images of microbes one at a time and describe what each one does.
3. Have students come up and sort each image into the appropriate column.

Find more resources at www.Clorox.com/Classrooms



The Case of the Invisible Invaders

Johnny and Ella were glad to see Harry at school. He had been home sick. Harry told Johnny that germs made him sick. Ella knew that germs are tiny living things. They are so small you have to use a microscope to see them. Johnny wanted to look for these germs at school. Luckily, Ella knew a way. She said they could use a microscope to look for clues. Ella, Johnny, and Harry were on *The Case of the Invisible Invaders!*



Help Ella, Johnny, and Harry investigate *The Case of the Invisible Invaders*.

What did you see when you looked with your eyes?
Draw a picture below.

What did you see when you looked through a microscope?
Draw a picture below.

Draw a picture of one of the germs you saw from a microscope.



Case Report: Every good investigator writes case reports. Case reports tell what you found. Write one thing you learned about germs.
