

# Science Action Grade 2:

## Grossology (Germs and Scabs)

Thank you for volunteering to help with the Science Action lab in your child's classroom on \_\_\_\_\_.

Please read the attached instructions BEFORE the lesson. It really does help!!! Plan on arriving 15 minutes before the lab is scheduled to begin. We will meet by the front office so that we can go over any questions and pass out supplies. Dress appropriately, we will be using some materials that may stain or damage clothing. Feel free to contact me with any questions.

Thank you,

**BRING THESE INSTRUCTIONS WITH  
YOU ON THE DAY OF YOUR LAB!!!**

## Objectives:

- Discover what germs are
- Discover how germs are spread
- Discover how germs enter the body
- Identify ways to avoid catching and spreading germs
- Discover what a scab is and why our bodies make them

## Materials:

- Glow Powder
- Black light
- Germ photographs
- Glasses with fake noses
- Spray bottles filled with water
- Tissues
- Petroleum jelly
- Red colored petroleum jelly
- Cocoa powder
- Craft sticks
- Toothpicks
- Hand wipes
- Germ detectives worksheets

## Introduction: (Full Group)

Before entering the room have one parent put on a small amount of glow powder on their hands and rub them together. This parent will greet the children upon entering the classroom (shake hands, pat on back, etc.). Another parent will plug in a black light in the front of the room and close the window blinds in the classroom.

## Lead Parent:

Begin with the class gathered on the rug area in the front of the room. **Welcome to Science Action.** (Introduce yourself and have the other parents do the same.) **Today's lab is called grossology. That's a made up name for the study of things that are gross. I bet you can think of a lot of things that are gross, some gross things most people don't care to talk about. Today we are going to talk about germs and scabs. Some of us may think germs and scabs are gross, but germs and scabs are things that most of us have to deal with everyday. Let's start our study with germs and how they are spread.**

***One of the parents put a special powder on their hands before they entered the classroom today and began shaking hands with a few of you. This powder represents (we are pretending it is) germs that could have been on their hands. Now we are going to turn off the lights and see how quickly these “germs” have spread.*** (Turn the black light on and show the students the glow powder on them.)

(Turn the classroom lights back on.) ***The light that we are using shows that the powder or “germs” moved from a parents hands to some of your classmates JUST BY SHAKING HANDS!!! Did you see any powder/ “germs” on anything else?*** (paper, pencils, clothing, desktops) Have the parent with powder on their hands go and wash now.

***Let’s talk a little more about germs.***

***What are germs?***

There are tiny living things (microorganisms) all around that we can’t see. They are bacteria, fungi, protozoa, algae, and viruses. Many of them do very good things for us and the planet--like decomposing (breaking down) materials into things that other organisms can use to grow. There are even billions of bacteria living inside each and every one of us. These bacteria help us digest our food and make vitamins that we need to live.

Some microorganisms (bacteria, viruses, fungi, algae and protozoa) can make us sick. We call these microorganisms germs.

***Can you see germs?***

No, germs are so small they cannot be seen by your eye, you must use a powerful microscope to see germs.

***I have some pictures of real germs that were taken under a microscope that I want to show to you.***

The lead parent can show the six overhead photos of what real germs look like when viewed through a very powerful microscope.

1. Salmonella (bacteria)
2. Strep throat (bacteria)
3. Measles (virus)
4. A white blood cell attacking three bacteria germs
5. White blood cells, red blood cells and platelets
6. Girl washing hands with soap and water

***Where can you get germs? How are germs spread?*** (Touching people’s hands, sneezing, coughing, ground/dirt, chewing on pencils/ fingernails)

***How do germs get in your body?*** (Any opening, eyes, nose, mouth, cut – this is where scabs come in handy, we will talk about that later)

***What is the best way to get rid of germs?*** (Wash hands often and thoroughly with soap and water)

***Now let's turn off the lights and check again under the black light to see if the parent with powder did a good job washing or if they missed some spots. What spots were missed?*** (knuckles, fingernails, in between fingers)  
***How can we get them cleaner next time?*** (Wash thoroughly) ***We still have some more grossology experiments to do so let's wait until the end of the lab to wash again.***

***In your groups you are going to do some fun experiments to see how easy it is to catch germs. You are also going to learn about scabs and how they help us.***

Lab Activities ( 5 small groups)

Activity #1:

***Remember some of the ways that we said you could get or spread germs?***  
(Put on glasses with fake nose, pretend to sneeze and spritz everyone with a spray bottle of water)

***What happens when I don't cover my face when I sneeze?*** (germs go everywhere)

***What happens when I cover my sneeze with my hands?*** Pretend to sneeze again with your hand covering the spray bottle.

***What happens when I touch you, a doorknob, a telephone, a pencil with my hands?*** (germs go everywhere)

***See how easily germs are spread? What is the best way to keep from spreading germs?*** (Sneeze/cough into your elbow, wash hands often, especially before eating)

Activity #2:

Spritz each child's desk with water. Give them a tissue and have them clean their desk. Hopefully the tissues will be dirty. ***This shows us that there are germs and dirt in places where you can't even see them! The same is true***

***for your hands, they may not look dirty but there can still be germs and dirt on them.***

### Activity #3:

***Now we are going to talk about scabs. Scabs are dried and clotted blood. A scab protects the injured skin underneath it until it is healed. This is the way the body protects itself from germs. Scabs form a barrier so the germs can't get into your body.***

***We are going to make our own pretend scabs today while I explain how a scab is made.***

1. Have each child determine where their "wound" will be – either on their hand or arm. Place a liberal amount of petroleum jelly on the "wound" site using a craft stick.

***When you first get a cut, tiny blood cells (things in your blood so small you can't see them with your eyes) called platelets rush to the cut to plug it up and make it stop bleeding.***

2. Put a small piece of single layer tissue on the "wound site" of each child, this represents the platelets. Mold the tissue into the shape of a wound – higher in the center.

***After a few minutes, the blood from your cut becomes jelly like, thick and gooey. The gooey blood is the red blood cells and the platelets forming a clot.***

3. Smear the blood-colored petroleum jelly in the center of the "wound" using as toothpick or craft stick.

***As the wound begins to heal it dries out and becomes a scab.***

4. Sprinkle lightly with cocoa powder around the edges and rub the cocoa in to make the edges dark. You may want to add some cocoa to the center of the wound too.

***While you have a scab the skin underneath is repairing itself and the white blood cells are fighting any bacteria germs that may have gotten in through your wound. It is important that you not pick at a scab, you need it for the cut to heal and to keep germs out. The scab will fall off on its own when the skin has been repaired.***

Have the students wipe off their scabs and wash if necessary. Hand out the Germ Detectives worksheet to the students.

**Closure:**

The lead parent closes the lab by asking the students to share something they learned from the lab or their favorite part. Thank the students and teacher.