

Germ: How We Can Fight Them
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Overview

This is a two-week unit designed to teach young children five or six years old that germs are all around us and can be very harmful even if we can't see them. We will learn the importance of avoiding germs through thorough hand washing, and through not sharing straws or cups. We will learn to cover our coughs and sneezes, and to keep our bodies healthy and ready to fight germs by brushing our teeth, and eating well. We will learn how our skin protects us but germs can enter our bodies through a cut or through our mouths, eyes, and noses. These crucial health concepts taken in part from the health curriculum currently provided by the Pittsburgh Board of Education are presently not being taught at all or are covered very briefly by the physical education teachers who see the students only once a week. This unit is two weeks long and can be taught in the kindergarten classroom by the homeroom teacher preferably in the early weeks of school or by the physical education teacher. These concepts meet the health standards of Pittsburgh Public Schools and are critical to the students' good health. They may even improve students' attendance by keeping them from getting sick as often as they normally do. According to the website SNAP (School Network for Absenteeism Prevention) "Nearly 22 million school days are lost annually due to the common cold." And this statement from the same source: "Infectious disease accounts for millions of lost school days each year."

The topics covered in this unit are included in *Your Health*, edited by Harcourt, 2003, but I have expanded and added to them in order that the students may be impressed by and remember the importance of defending ourselves against germs, which we discuss often and in depth during the unit. The textbook that is currently in use and from which I draw the topics in my unit covers nine

chapters. My unit however will concentrate on topics from only chapter 3 "Caring for My Teeth", chapter 5, "Food for Health", chapter 6, "Staying Well", and chapter 7, "Medicines Help--Drugs Hurt." From chapter 3 I drew information about keeping our teeth clean and how that helps get rid of germs in our bodies. Chapter 5 provided pictures and information on the food pyramid, food safety and healthful snacks. Healthy bodies enable us to fight off many germs that manage to get past our defenses. Most of the information that was useful about germ-fighting came from chapter 6. This included some instruction on hand washing, and covering our coughs and sneezes, and not sharing straws or juice containers. Due to the lack of time scheduled for health and physical education at this grade level it was important to select the most critical health lessons to be taught and to create a format to teach these lessons in the regular classroom.

The lessons in this unit cover serious health issues in a light and entertaining way using songs, rhymes, art projects and other activities that are fun to do and easy to understand and are appropriate for the kindergarten or first grade level. Each lesson will contain a story to be read aloud to the class, an activity or experiment centered on learning more about germs, and a hand-washing activity, each time repeating the appropriate steps we will learn to wash our hands effectively. We will read many picture books on the subject of viruses and bacteria, red and white blood cells, and our body's defenses against germs. We will construct three dimensional germs in art class and make other pictures and sculptures of germs; we will learn songs to sing as we wash our hands that will encourage us to wash longer and more thoroughly and that can be sung in kindergarten and in music class. There is an activity for gym class to play germ tag, and it would be very appropriate to look for more information on germs as part of our library class. This collaboration of teachers in four or five different subject areas cooperating to teach about germs, avoiding germs and healthy eating provides for an in-depth study of the subject. As a culminating activity we will present a play demonstrating what we have learned. Some characters will portray students who wash their hands and cover their mouths and understand what germs can do; others will be students who don't know the harm germs can cause and do not practice good health habits. We can present this play for the other kindergarten class and for the preschoolers who will benefit from the healthy habits learned.

Rationale

In the past our kindergarten students were taught some health as a part of our social studies curriculum, but there are no health lessons included in the new social studies textbooks. This year our physical education teachers are given the task of teaching health as well as their gym classes. Unfortunately both

kindergarten classes have gym only once a week. They need and want this time for physical activity. So realistically health education is not being taught at our grade level. The health textbook, *Your Health*, has posters, transparencies, and teachers' resource books in the new curriculum, however, it is not being used as it should be because there is not adequate time scheduled to teach it.

I believe that parts of this curriculum are so important that they must be covered, and that there is a real need for my two week unit covering germs and keeping them off our body parts the best we can. Very little material in the current textbook mentions germs and there are no vivid pictures about germs and our body's defenses against them. It does include a single lesson on hand washing and mentions its importance, that it controls the spread of germs. The author suggests singing a song as children wash their hands and recommends role playing situations that would prevent the spread of germs, like using a tissue to wipe your nose. There is some research that indicates that cleaning our hands consistently and well can prevent spreading some sicknesses and can improve our school attendance, one of the goals of our school. According to SNAP "A four-week hand washing program for a class of first grade students was associated with fewer absences and prescribed antibiotics than were reported the previous school year." This topic should be given more attention in our health lessons and hand washing instructions should be repeated many times. One thing we can no longer do as teachers and care takers of young children is to assume they are learning this at home. It is too important to leave the instruction to parents alone. Some parents will teach it thoroughly and well, but many will not. From those children who spread the germs or come to school sick, we all can get sick unless we use the precautions presented in this unit.

The preschool class at Mifflin School is using *Growing, Growing Strong: A Whole Health Curriculum for Young Children*, Smith, Hendricks, and Bennet, 1997. This textbook has a section in chapter 2 which lists seven steps explaining how to wash our hands. It is very detailed and lists the times children should wash their hands and suggests putting up reminder signs to wash hands after going to the bathroom and after painting. Chapter 3 covers the topic of sharing food and drinks in a safe way by cutting or dividing the food before our mouths touch anything. Pour a shared drink into two glasses instead of sharing a cup or straw this section states, and "When taking food from a platter, take the first item that you touch." The name of this section is "I Share Food, Not Germs". This textbook is written for children three and four years old. It includes good details in the how-to sections of hand washing and sharing food but it does not create an awareness of germs as clear and as vivid as I would like to do. Germs are discussed again in chapter 8. The authors bring up to children that germs are invisible and to illustrate they describe using lemon juice sprayed on a sheet of paper, then placed in an oven or ironed. The spray will then be visible. Then the

children are to go to “germ experts” at a science lab to see germs through a microscope. But the book cautions: “Care should be taken not to frighten children about germs.”

The ideas mentioned above are excellent ideas as far as they go, but I would bring the microscope to school or just the pictures of microscopic slides of germs available on the internet at <http://www.rkm.com.au/imagelibrary/> and in books like *Human Body*, DK Publishing, ed., 2003, which shows actual photographs of white blood cells gobbling up germs. These pictures are wonderfully detailed in color but are not as frightening to our modern five and six year olds as many cartoons and movies they see.

Sharron Gallant is teaching her sixth-graders at Gardiner Regional Middle School in Maine about germs, bacteria and viruses. Instead of a textbook she is using dozens of books, some of them not even science books. She is using children’s literature to increase the students’ understanding of science concepts by improving their reading comprehension. She then works other books into the class lessons, linking the science concepts. She was awarded a \$2000 grant by ING Northern Annuity Company and named by them as one of the nation’s 100 outstanding educators for her interwoven text method. She read aloud from *Germs Make Me Sick* by Melvin Berger along with several other books about germs and microbes. The idea of using children’s stories and children’s science books to teach science concepts is similar to the plan I have for this unit. At the kindergarten level the books must be read to the students, but oral questions and discussions and written responses can help evaluate the students’ comprehension after each story.

In my unit there is a story or informational book about germs or fighting germs for each day of the two weeks, which will stimulate and lead discussion of the lesson for that day. We will emphasize in this unit clean hands and stopping the spread of germs by doing at least one activity or experiment each day about germs and the spread of germs. We will create an awareness of the unseen germs by these activities and by repeatedly emphasizing hand washing. Covering our mouths when we cough or sneeze is another issue with five year olds who will often sneeze or cough right in my face or on one another. I’m sure they have heard it before but they need to hear again and again to turn their heads and cover their mouths. If they all get a chance to feel the moisture from a spray bottle in a simulated cough, or to see and feel glitter or powder from a burst balloon, they may get the idea that germs spread this way and remember to cover up their mouths. The pattern of washing our hands, reading a story about germs, and doing an activity or experiment each day will create an awareness of germs that will hopefully last forever.

In the ERIC Digest, December 1999, Susan J. Grosse wrote an article entitled "Educating Children and Youth To Prevent Contagious Disease." She advises to go beyond just the basic health lessons I've mentioned here "to prevent the transmission of disease in school settings." When she lists items that we should not share that can transmit disease she includes toys that have been mouthed, soda cans, straws, eating utensils, drinking glasses, pencils, pens, towels, lipstick, and chapstick. She advises cleaning any toys or other objects that were mouthed with a 10 % bleach solution. She goes further to mention that children can clean up their own hazardous waste, such as used tissues, discarded bandages or gauze pads. If children pick up someone else's used things they should use a barrier such as paper towels or a plastic bag in place of rubber gloves. It makes sense that this contagion education should be taught and modeled in school settings at all ages, even kindergarten.

In the two week unit I will use one full forty-five minute lesson each day of the two weeks covering these areas: brushing our teeth, eating healthy foods for meals and snacks, the importance of clean clothes and clean bodies, how our bodies fight germs, what germs look like and how they spread, how to avoid transmitting (sharing) these germs, and how medicines, immunizations, and doctors help us to stay healthy. Everything in the unit comes back to an awareness of germs and how to fight them.

The seminar that inspired this unit is titled "Disease Disasters: Pandemics, Epidemics, and How and Why They Happen" led by Dr. Lisa Lambert. During our weekly seminars in April we spent two lessons doing activities with beans and with Hershey's kisses which demonstrated how human interaction spreads diseases, like the plague and the flu. We reached into each others paper bags to randomly select a bean or a Hershey's kiss that represented some sort of germ that would give us some sort of disease that we didn't want. We discussed the 1918 flu epidemic, and some of the similarities to the Black Death in Europe. They were both infectious diseases spread through human contact. We learned that some towns like Milan, Italy that closed its doors to travelers to avoid infection and the staggering deaths of other towns fared much better. These towns had many fewer if any deaths from the plague. The spreading of diseases and illnesses through germs was always in our discussions. This dramatically illustrated the importance of sanitation. I wanted to explain this to children on their level, in a way they will understand and remember.

Every article, book, and website I read listed washing hands as the single most important thing we can do to prevent the spread of disease and sickness. From <http://www.cdc.gov/ncidod/op/handwashing.htm> , the website of the CDC, Center for Disease Control, came this quote, "The most important thing that you can do to keep from getting sick is to wash your hands." Also this from the same

source: “The important thing to remember is that, in addition to colds, some pretty serious diseases...like hepatitis A, meningitis, and infectious diarrhea...can easily be prevented if people make a habit of washing their hands.” In my lessons I tried to keep this in mind and to plan lessons for small children in a way that they will grasp their importance. Covering our mouths when we sneeze and cough was also of great importance and needs to be taught repeatedly. The Harcourt book, *Your Health*, did cover both these ideas, but only briefly. I cover them repeatedly and in more detail. These ideas, though simple, are so important that I believe if they are taught by the classroom teacher in the beginning of the year when the children are first learning their basic classroom routines, they will make an impression and be remembered.

The Scrub Club is the name of a website sponsored by the NSF which has games and songs to teach children about washing hands. They have names for each germ, BAC (bacteria), Sal Monella, and E. Coli, are some of the characters in the gallery of villains. This site has games, songs, and many facts that teach about germs and hand washing. It is entertaining and children can download coloring sheets and can join the club. This site is listed in the bibliography and is interesting and fun for children with some computer skills and it reinforces the importance of hand washing.

Objectives

The objectives that are related to my seminar and which I have emphasized throughout this unit are taken from the Pittsburgh Public Schools standards for “Health, Safety, and Physical Education”. The academic standards I have addressed are in “Concepts of Health” and “Healthy Living” in the units of nutrition, personal hygiene, and infectious diseases.

The standard 10.1 "Concepts of Health, Unit: Nutrition" will be addressed by our lessons on the food pyramid. We will discuss the foods pictured in each category of the pyramid and how many servings we should have each day. We will give the reasons we put foods in a pyramid shape and name foods in each category. The connection between healthy bodies, good nutrition, and fighting germs will be taught in this lesson.

The standard 10.1 "Concepts of Health, Unit: Personal Hygiene" will be met by our lessons on brushing our teeth and washing our hands and all our skin. Plaque, described as the “gooey stuff that builds up on your teeth” and its relation to bacteria is found in one of our stories, *I Know Why I Brush My Teeth*, Rowan, 2000. We will address covering our mouths when we sneeze and cough and how germs travel. The children will be able to explain several ways to fight germs at the end of the unit.

The standard 10.2 "Healthful Living, Unit: Infectious Diseases" will also be addressed by our lessons about hand-washing, covering our mouths when sneezing and coughing, and staying home when we are really sick. Discussing doctor visits and getting shots is part of this standard and we will cover this in one of our stories, *Germs Make Me Sick*, Berger, 1985. *Body Battles*, Gelman, 1992, explains viruses and bacteria and lists all our body's defenses against them including skin, mucus, cilia, earwax, stomach acid, and lymphocytes. White blood cells are described as "germ busters" in *I Know How We Fight Germs*, Rowan, 1998, another one of the books we will read in our lessons. A list of all the health standards is included in the appendix.

Through listing words and phrases as a whole group which we will do in every lesson and through all our discussions, we will fulfill several of the reading standards:

Reading, Writing, Speaking and Listening

2. All students read and use a variety of methods to make sense of various kinds of complex texts.
3. All students respond orally and in writing to information and ideas gained by reading narrative and informational texts and use the information and ideas to make decisions and solve problems.
6. All students exchange information orally, including understanding and giving spoken instructions, asking and answering questions appropriately, and promoting effective group communications.

A list of reading standards that are fulfilled by this unit is also listed in the appendix.

My goal is that students will be able to discuss how germs are spread and that they can name specific things they can do to prevent the spread of germs. Since a lot of time will be spent on washing our hands activities and covering our mouths, I am expecting students to mention this first as an important part of the things they can do. We will be coloring pictures of germs, creating models of germs, and role-playing the spread of germs, as well as reading a number of colorful picture books on these subjects, so I am expecting this will be foremost in their minds at the end of the unit and hopefully all year.

They should also be able to model how to brush their teeth correctly and name foods in each category of the food pyramid. They will describe the connection between eating good foods and fighting diseases and sickness.

By the second semester of kindergarten the children can write in their own unique way...a combination of drawing pictures and spelling words phonetically, called inventive spelling. However, if we do this unit at the beginning of the year it will be too early for much writing. They can however draw pictures and make random letters or beginning sounds of words and convey their ideas about germs and good food and good habits in this way. We will make a class book binding all our papers into one book that we can "read" again and again at reading time. Our responses to these books, many of which are factual, will fulfill the "response to informational text" requirement in our Standards-Based Portfolios.

Strategies

Kindergarten students come to school, at least most of them, with little knowledge of the behavior expected of them in a public school. Every year we spend almost one month getting used to walking in lines, raising our hands to speak, and learning to attend to lessons and follow rules. During this introduction to school some health concepts can be taught at the same time as the rules of conduct that we expect them to know throughout the year. As this plan takes effect there will hopefully be a lot less germs and illness passed from student to student.

Teachers do not eat lunch with students in our school, but some health habits that should take place during lunch will be taught in this unit. We will demonstrate using cups, straws, and juice containers exclusively and we will talk about how sharing is nice but sharing germs is not so nice. There is not a lot of choice of foods for the primary grade children if they buy their lunches, but we can perhaps influence the amount of candy they eat which is available to buy. Our discussions about the food pyramid may guide their choices.

Science will be a basic part of this unit. We will demonstrate what germs are and that they really are there even when we can't see them. Several experiments with glitter on our hands and water dispersed in the bursting of a balloon will help them see germs as being present everywhere. We will do an experiment with potato slices, wiping our hands on one, blowing on another, and watch what happens after a few days. We will discuss viruses and bacteria, and how some are harmful and some are useful.

Each day we will wash our hands thoroughly and sing a song which will help us wash longer. We will list the important times to wash our hands and post that list in our classroom with reminders in the bathroom.

Other disciplines can be involved in this unit through a collaboration among colleagues. The art teacher can create pictures and three dimensional models of germs. Clay or papier mache' models of foods from the food pyramid would complement our study of healthful food. The physical education teacher could have the class play "germ tag." Children with red balls are "germs"; children with green balls are "doctors." They can run, walk or skip around a designated area and when tagged by a germ lie on their backs and flail their arms and legs in the air. A "doctor" can cure them by tagging them and they can be unfrozen and free to move around again.

Fortunately there are many good books on the subject of germs and our bodies fighting germs. There are enough books that we can read one book each day of the two weeks. Some books, like *Body Battles*, have colorful illustrations of viruses, bacteria and white blood cells. One book, *Eye Wonder: The Human Body*, has amazing microscopic photographs of bacteria, viruses, and a white blood cell "gobbling up a germ." As mentioned before the children may write responses to these books as either a "response to literature" or a response to "informational text" and these can fulfill the requirements of the Standards-Based Portfolios.

Children love to snack at school and we always have a healthful snack each day. Using the newest version of the food pyramid we will sample foods from each level of the pyramid and discuss its relative importance.

At the end of the two weeks we will role-play. Kindergartners thoroughly enjoy drama and acting out plays and stories. Some children will act out the good habits we learned while others will show the behavior we know is not healthy. This will lead to our final discussions and will help the teacher evaluate what the students have learned.

Classroom Activities

Below are the first two lessons of the unit plus activities that can be used for the rest of the two weeks.

Lesson One

Objective: Children become aware of germs and can describe how to wash their hands thoroughly. They can sing a song about the hand-washing process.

Materials: Chart paper or blackboard, sink, water, soap, and *Germs Make me Sick* by Melvin Berger

The first day of this unit will begin with some questions to stir up a discussion of what germs are and what we know about them. Expecting some very limited knowledge of the topic, we will record on chart paper the group's remarks with their names attached to their comments so we can refer to them at the end of the unit. This will give us some method of assessing how much we have learned.

Some sample questions:

What is a germ?
Where are they?
Are they good or harmful?
Can you see them?
Why or why not?
How do they move around?
Are they everywhere?
Can I keep germs away from me?

We will read *Germs Make me Sick*, Berger. This book will introduce the following vocabulary which will come up often in the following two weeks: white blood cells, red blood cells, bacteria, viruses, and antibodies. This book tells the story of how we pick up viruses and bacteria and even details how they take over other cells in our bodies. It will answer most of the questions we asked and give tips at the end to wash your hands, eat healthful food and more.

We will create our first detailed description of how to wash hands and will do a demonstration in our bathroom where we will post this list:

1. Wet hands with warm water.
2. Rub soap onto your hands.
3. Lather up.
4. Rub soap between fingers and on backs of hands and under our fingernails.
5. Rinse.
6. Dry our hands.

Before we wash our hands pour lotion or water on our hands and some glitter that should stick to our hands. As we wash our hands we will sing the song "Washing, washing", written for this unit to make sure the children wash longer. It is sung to

the tune of “The Alphabet Song” and we will sing it every day until we know it. The children should notice that the glitter does not all come off with the first washing. Explain that this is similar to germs which hang on as well. Have them wash again and check out the glitter again.

Lesson Two

Objective: The students will identify where germs can be found.

Materials: Magazines, scissors, glue or tape, poster board “Wash Your Hands.”

We will begin by reviewing some of the words we learned yesterday and ask the children to watch for those words occurring in today’s story. We will then read *Wash Your Hands* by Tony Ross. The little princess is admonished to wash her hands after playing in mud, before she eats, after playing with her dog, after using the potty, and after sneezing. Why? Because of germs and nasties she is told.

After this story we will discuss the places where the princess picked up germs. Then we will cut out pictures from magazines of the places where germs can be found, such as: in dirt or on the ground, on forks, spoons and cups, toothbrushes, half-eaten food, sneezing or coughing, wiping noses or eyes, tissues, and toilets. Then we will glue or tape these on to a poster board with the caption “Where Germs Can Be Found”.

Repeat the hand washing song of yesterday and wash our hands again. This time we can dip our hands in paint first or paint children’s hands with a brush and allow the children to wash only briefly. Examine our hands to note the paint remaining. Make the comparison between paint and germs. Send children two at a time to the bathroom to wash more thoroughly.

More Classroom Activities

The third day read *Body Battles*, Gelman, 1992. Then list the ways our bodies fight germs. For the activity the teacher holds up a tissue to her face and pretends to sneeze, spraying the students with water from a small spray bottle. Feeling the spray on their faces makes the point that germs can travel this way and that we should cover up. From Trudee Romanek’s book *Achoo, 2003*, on page 4 there is a one page story about a woman who sneezed once every minute for days and days adding up to almost three years eventually. This story fits well with this lesson. Wash our hands and sing our “Washing Hands Song.”

Day four begins with reading *I Know How We Fight Germs*, Rowan, 2000. After this story remind the children about the germs that can spread when we do not cover our sneezes with a tissue. Have two balloons filled with paper hole punches, one is blown up and tied, the other is not blown up. Demonstrate germs going into the tissue by blowing up the deflated balloon, pretend to sneeze and let the air into the tissue. Show the children how the pretend germs (the paper circles) have gone into the tissue. Then pretend to sneeze again without a tissue holding the second balloon, burst the balloon with a pin and the “germs” fly everywhere. Then the class can color the page of germs drawn for us by Lisa Seligman, our art teacher, and discuss which pictures are viruses and which are bacteria. The class should then talk about what these germs resemble and if we can we see them or are they too small.

The last day of the first week can begin with a review of what we know about germs. Take a look at some photographs of the same viruses and bacteria we colored yesterday taken from the website: <http://www.rkm.com.au/imagelibrary/>. After looking at these colorful, detailed photographs of actual germs they can make some models of germs with materials made available on their tables. Credible-looking germs can be made with Styrofoam balls, peanuts, clay, spiral macaroni, pipe cleaners, toothpicks, etc. Then read *Inside Ralphie: A Book About Germs*, Cole, 1995. Before leaving wash our hands and sing our song.

The second week we will look at and discuss teaching chart 12 from the Harcourt curriculum, "Cleaning My Teeth". *Those Icky Sticky Cavity-Causing but Invisible Germs*, Rice, 1997, will be read and each child will want to tell about his/her tooth experiences. We will examine the proper way to brush and the important times to brush. The vocabulary words to be listed on a chart are: teeth, toothbrush, tartar, gums, dentist, invisible, cavity, check-up, and fluoride. This subject is one they hopefully all have some experience with so this would be appropriate for a response to literature with drawings and writings. After we share our responses we wash our hands and sing our song.

The second day of this week we will continue discussing and practicing how to brush correctly. We will read *I Know Why I Brush My Teeth*, Rowan, 2000. Review vocabulary words from yesterday and add "enamel", "dentin", and "pulp". Have children cut out pictures from magazines of dentists, teeth, tooth brushes, tooth paste, floss, etc. and have them glue onto squares of different colors of construction paper to make a tooth care mobile. Punch holes in the squares of paper and hang from varying lengths of string tied to a hanger or sticks. Hang them around the room. Wash our hands and sing our song.

Day three is time to discuss the food pyramid and healthy meals and snacks. Read *Go, Glow, Grow: Foods for You*, USDA, Food and Consumer Service, 1996. Give children the paper in the appendix, an empty triangle with empty shelves for drawing food. Name each section and color the foods in that section. They are listed here and in the appendix.

The bottom of the pyramid contains breads, cereals, rice, and pasta. Explain that it is the largest section because we should eat the largest amount of our daily food from this group. The next two sections going up the pyramid are fruits and vegetables which are almost equal in size which means we should eat a lot from each of these. Next on the pyramid are the milk group, including all dairy foods and meats, nuts, eggs and fish. These are important but we should eat less of these than the other three groups mentioned. The last group at the top of the pyramid is the group of fats, oils and sweets. These should not be a big part of our diet. Children should name foods from all these groups.

Prepare a healthy snack such as "ants on a log", celery with peanut butter and raisins on top, and serve with milk. Discuss which section each part of that snack comes from. Wash our hands before the snack and afterwards.

The fourth day we will devote to good nutrition once again. We will fill in the labels on the food guide pyramid provided by Harcourt with the teachers' resources. Discuss how milk makes strong teeth and bones, bread and whole grains give us energy, and each food on the food pyramid provides nutrition for our bodies. Mention vitamins and minerals and that keeping strong bodies helps us fight germs. Read page 12 and 13 from *You and Your Body*, Hewitt, 1998. The section named "Eating and Drinking" describes each food group briefly. Refer to or reread *Body Battles*, Gelman, 1992, to explain that food helps the body stay strong to do its defensive job. Serve orange or apple slices and milk. Wash our hands and sing our song.

The final day is to review what we have learned. List a lot of the facts we know. List any facts we would still like to learn which we can look for in the future at the library or in magazines. Present a short play and ask students to portray different situations that we have discussed. Have two children stand up together and ask them what they do when they sneeze and cough. One will correctly cover his mouth and turn his head. The other will pretend to sneeze and cough on everyone. Four other children can demonstrate the right way and the wrong way to share a drink. Two pour the single drink into two glasses or cups. The other two pretend to share a single cup or straw. Two children demonstrate how to wipe our noses on a tissue and throw it in the trash. The other child can use his sleeve or throw his tissue on the floor. Two more children can demonstrate choosing healthy snacks and brushing our teeth.

Annotated Bibliography/Resources

Books to read to Children

Berger, Melvin, Germes Make Me Sick, Harper and Row Publishers, New York, 1985. *This had marvelous illustrations and is a very simple explanation of the white cells and antibodies.*

Berger, Melvin, Why I Sneeze, Shiver, Hiccup, and Yawn, Harper Collins, New York, 2000. *This is related to germs in that it explains in a comical way why we sneeze and expel dirt and germs.*

Bingham, Caroline, Human Body:Open Your Eyes to a World of Discovery, DK, New York, 2003. *This is a chapter book with fantastic photographs of bacteria, white blood cells eating a germ, viruses, and red blood cells and many other close-ups of body tissues.*

Cole, Joanna, Cuts, Breaks, Bruises, and Burns: How Your Body Heals, Thomas Y. Crowell, New York, 1985. *A chapter book on how things heal, what makes a scar. Pages 13 and 14 had a series of drawings about “How a white blood cell swims” and “How a white blood cell eats a bacterium”.*

Cole, Joanna, Inside Ralphie: A Book About Germs, based on the Magic School Bus Books, Scholastic Inc., 1995. *Ralphie is sick at home and Miss Frizzle takes the class on the magic school bus through a cut on Ralphie’s knee into his blood stream. The discussion and pictures are about white blood cells and bacteria.*

Gelman, Rita Golden, Body Battles, Scholastic, Inc., New York, 1992. *Wonderful illustrations and very well done simple explanation of the immune system are combined in this book.*

Hewitt, Sally, You and Your Body, Children’s Press, a division of Grolier Publishing, New York, 1998. *A science book about body parts and body systems, included several pages on good food, germs, and washing hands, skin care and getting shots. This is an easy reader for first or second grade.*

Meredith, Susan, What's Inside You?,: Usborne Pocket Science, Scholastic, Inc., New York, 2001. *A few of these pages display our teeth and how we have two sets of teeth growing inside our gums, how to clean them, and the food we should eat to give you energy, repair your body, make bones strong, and keep your body efficient.*

Romanek, Trudee, Achoo: The most interesting book you'll ever read about germs, Kids Can Press Ltd., Tonawanda, New York, 2003.

Rice, Judith Anne, Those Icky Sticky Smelly Cavity-Causing but Invisible Germs, Redleaf Press, St. Paul, Minnesota, 1997. *Written in Spanish and English both on the same page, this is a humorous story of Sal, a little boy who brushes his teeth but can't get all the germs off his teeth and goes to the dentist to remove the tartar. It contains photographs of Sal and cartoon drawings of the germs.*

Ross, Tony, Wash Your Hands, Kane/Miller Book Publishers, LaJolla, CA, 1998. *Humorous story about a little princess who is told over and over to wash her hands, and gets very angry. The maid, the servant, and her family explain how germs are in the nasties to her and how she must wash her hands many times throughout the day.*

Rowan, Kate, I Know How We Fight Germs, Scholastic, Inc., New York, 1998. *This book also deals with white blood cells killing bacteria in the form of a story of a mom and her son working in the garden. This is very well illustrated.*

U.S.D.A. Food and Consumer Service, Go, Glow, Grow: Foods for You, Washington D.C., 1996. *Children pick foods for meals from the food pyramid and some discussion of where foods come from.*

Books for Adults

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Appendices

Our Washing Hands Song

(sung to the tune Twinkle, Twinkle, Little Star)

A, B, C, D, E, F, G,

Germs are terrible for me.

Washing, washing them away,

Helps me be healthy all day.

H, I, J, K, L, M, N,

We will wash germs off all ten.

Washing fingers like I should,

Down the drain germs go for good.

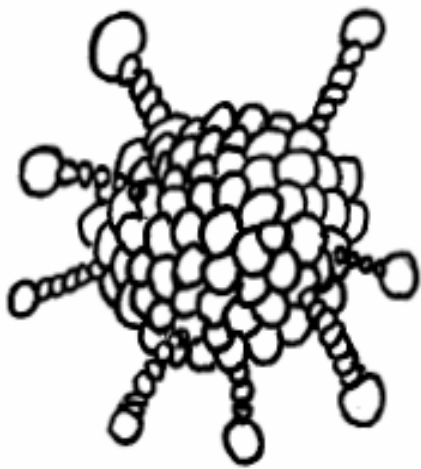
O, P, Q, R, S, T, U

You have made germs say “Boo Hoo”.

V, W, X, Y, Z,

Get these “yicky” germs off me.

“What Are Germs” Coloring Sheet



Rhinovirus



Salmonella Typhimurium
(bacteria)



Bacteriophage T-2 (virus)



Streptococcus (bacteria)



Spirillum (bacteria)

Lisa Seligman

FOOD Guide PYRAMID

for Young Children

A Daily Guide for
3- to 6-Year-Olds

Fats & Sweets (small amount)

MILK Group 2 servings

MEAT Group 2 servings

VEGETABLE Group 3 servings

FRUIT Group 2 servings

GRAIN Group 6 servings

FOOD IS FUN and learning about food is fun, too. Eating foods from the Food Guide Pyramid and being physically active will help you grow healthy and strong.

WHAT COUNTS AS ONE SERVING?

<p>GRAIN GROUP 1 slice of bread 1/2 cup of cereal (all dry cereals) 1 slice of toast (all bread) 1/2 cup of cooked cereal 1/2 cup of dry pasta (cooked)</p>	<p>MEAT GROUP 1 slice of lean cooked meat 1/2 cup of cooked poultry 1/2 cup of cooked fish 1/2 cup of beans</p>	<p>MILK GROUP 1/2 cup of milk (all milk) 1/2 cup of yogurt (all yogurt) 1/2 cup of cottage cheese (all cottage cheese) 1/2 cup of soft cheese (all soft cheese)</p>
<p>VEGETABLE GROUP 1/2 cup of cooked or canned vegetables 1/2 cup of raw vegetables (all vegetables)</p>	<p>FRUIT GROUP 1/2 cup of fruit (all fruit) 1/2 cup of juice (all juice) 1/2 cup of dried fruit (all dried fruit)</p>	<p>EGGS AND NUTS 1 egg (all eggs) 1/2 cup of nuts (all nuts)</p>

*Even 3- to 5-year-olds can eat these serving sizes. Offer 2- to 3-year-olds less, except for milk. *For 4- to 6-year-olds, offer one and a half of 2 servings from the milk group each day.

EAT a variety of **FOODS** AND **ENJOY!**

http://www.flowersbakeries.com/electropublisher/clientdirectories/images/food_guide_kids.gif

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