



Grade: 2nd Subject: Science Unit: Germs: What Makes Me Sick Time: 24 days

Instructional Goals: TLW explain the meaning of germs.

TLW understand how germs are spread

TLW list ways to prevent germs from spreading.

TLW explain how you can prevent sickness and injuries

TLW promote healthful living.

ESLO Standard	Objective, (E, D, M) E=Emerging, D= Developing, M=Mastery	Duration	Teaching Method	Resources/Text	Assessment	Additional Notes/ Biblical Integration
1 2 3 4 5 6 7 8	<p>Unit Overview: TLW be able to explain the meaning of germs, understand how germs are spread, list ways to prevent germs from spreading, explain how you can prevent sickness and injuries, and be able to promote healthful living. (E) (*not WA State Standards)</p>	7 – 8 weeks for the complete Expedition	<p>Expedition Final Products: MAJOR PROJECT: A newscast to inform the public and our school about germs and how they are spread. It will also inform others on ways they can prevent germs from spreading and things they can do to prevent sickness and injury. MINOR PROJECT: A plan to promote cleanliness at Doulos. For ex: liquid soap, single use paper towels and hand sanitizer in bathrooms. And instructions posted how to properly wash your hands to prevent illness.</p>	<p>Discovery Works Unit Textbook Movie – “Osmosis Jones” “Germs are not for sharing” Elizabeth Verdick “The Magic School Bus: Inside Ralphie” Joanna Cole “Matar los germenes” Melanie Mitchell “Germs, Germs, Germs” Bobbi Katz “What Makes You Ill” “Germs make me sick” Melvin Berger “Porque debo... lavarme las manos?” Jackie Gaff</p>		<p>BI: Jesus is the ultimate healer. Share stories of Jesus’ healing power. We need faith to experience his healing power. What does faith mean?</p>
2 3 4 7 8	<p>TLW look at pictures and observe what they see. From their observations they will make a guess as to what they think these pictures represent. (D) (*not WA State Standards)  Communicate honestly about their investigations, describing how observations were made and summarizing results. (D)</p>	3 days	<p><b>Hands on Activity, Brainstorming, Peer Sharing</b> Building Background Knowledge: Pass out mystery text- pictures of different things related to germs, how germs are spread, etc. Students will look at all the pictures and write down as many things as you can think of that are happening in these pictures. Make a web together to show how the different pictures were alike and different. Students write on class learning web.</p>	Mystery text pictures	Participation	
	INQQ					





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2 8	TLW discover the two types of germs and what they might look like when using a microscope. (E) (*not WA State Standards)  INQF  Accurately describe results, referring to the graph or other data as evidence. Draw a conclusion about the question that motivated the study using the results of the investigation as evidence. (D)	1 day	<b>Read and Response, Hands On Activity</b> Students read page. E4 in <i>Discovery Works</i> . Discuss the two kinds of germs Bacteria and Viruses Germs are so small that over 1,000 could fit across the tip of a pencil. Help children realize that germs cannot be seen without the use of a microscope. Ask “what words would you use to describe the shapes of these germs?” (The bacteria shown are rod-shaped bacilli; curved spirilla; and roundshaped cocci. The influenza virus is peanut shaped; the chickenpox virus is round shaped.) Pass out playdough. Have kids look at the pictures of germs in their book. What are some shapes you see. Use pieces of playdough to make models of the different germs you see.	Discovery Works Playdough, pictures of germs in books	Participation	
2 4 7	TLW discover that germs can spread by a sneeze and how their sneeze can effect others. (D) (*not WA State Standards)	1 day	<b>Read and Response, Hands On Activity, Video</b> Lesson 2 How does a sneeze spread germs? Read the first few pages of <i>Germs make me sick</i> ; students listen for different ways that germs are spread. Read pages 1-11. On page 11, ask “why do some of the children look worried? Why should the boy cover his nose and mouth when he sneezes?” Watch Youtube. Sneeze if you need to – Silly songs with Larry (3 min.) Draw a picture of what you think happens when you sneeze.	<i>Germs Make me sick</i> , YouTube video	Draw a picture of what you think happens when you sneeze and you don't cover your mouth.	





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2 3 4 6 7 8	TLW observe other ways that germs are spread. (D) (*not WA State Standards)  Communicate honestly about their investigations, describing how observations were made and summarizing results. (D)	1 day	important to use a tissue? What can you use if there isn't a tissue available? (sneeze in your upper sleeve. Fabric doesn't hold germs well.) Students learn germ poem by writing and decorating it. If you cough, or if you sneeze cover your mouth with a tissue, please. If no tissue is in site, use your sleeve it is polite.	plates, glitter, paper towels, cloth to cover tables	Participation – group work	



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2 4 7	TLW will connect hand hygiene with maintaining their health. (D) (*not WA State Standards)	1 day	<p>hand (palm side down) in the container of glitter. Then have students take turns shaking hands firmly with the other members of the group.</p> <p>After all students in the group have shaken hands, tell them to rub off the different colors of glitter from their hands onto the white cloths or paper towels.</p> <p>Students journal their observations about the colors of glitter that are on the cloths or towels.</p> <p>Discuss: Do you notice more of any particular color of glitter? Why might that be? What does this activity teach you about the way germs spread?</p> <p>Students answer: What did this experiment teach you about the importance of washing your hands?</p> <p><b>Experimentation, Hands On Activity</b> Demonstrate proper hand washing technique. Why do we need to wash our hands? Prepare gelatin as directed on the box, except instead of using boiling water to dissolve the gelatin, substitute chicken broth and add the unflavored gelatin to the mix. When the gelatin begins to thicken, refrigerate. Prep the lesson by putting 3 tlbsp. of culture on each plate and wrapping them tightly with plastic wrap. Keep them refrigerated until ready to use. Label one plate “before washing” and the other plate “after washing” Talk with students about why it is important to properly wash our hands.</p>	plates, plastic wrap, paper towels, culture mix: 2 packages gelatin dessert – lemon or light colored 2 packages unflavored gelatin 2-4 cups chicken broth Two plastic plates per group, Plastic wrap, Paper Towels, Soap (in a pump and anti bacterial), Pictures of how to wash your hands.	Students make brief predictions of what they will find on their culture plates in a few days	



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			Review proper hand washing. Have paper towels and pump soap in the bathroom. Explain that germs are living on our hands and if we do not wash our hands properly they can make us sick. Tell them that we will be growing some germs from our unwashed hands. <ol style="list-style-type: none"> <li>Call each student to the sink and have them place an unwashed hand firmly in to the culture on the plate labeled "before washing"</li> <li>Have them properly wash their hands</li> <li>Then have them place their clean hand in the culture on the plate labeled "after washing"</li> <li>Have them wash their hands again.</li> </ol> When all students are finished explain to them that we are going to keep these at school for a few days and see what germs will begin to grow. Put plates in the plastic tub until Friday.			
2 3 4 6 7 8	TLW understand the importance of teaching others how to have proper hygiene. (E) (*not WA State Standards)  Design a solution to a simple problem (e.g., design a tool for removing an object from a jar when your hand doesn't fit) using a technological design process that includes: defining the problem, gathering information, exploring ideas, making a plan, testing possible solutions to see which is best,	4 day	<b>Role Playing, Demonstration</b> Activity: When do we need to wash our hands? Students will work together as a class and think of different times we need to wash our hands. What happens if we don't wash our hands? What is the problem? How can we solve it? Will washing our hands work (refer to experiment with bacteria growth.) Teach the proper method to washing hands. <ol style="list-style-type: none"> <li>Turn on the water and put your hands below the water.</li> </ol>	Hand washing instructions, soap, paper towels	Drama Quiz: write the steps for handwashing	



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	and communicating the results. (E)		<ol style="list-style-type: none"> <li>2. Put a small amount of liquid soap in your hands.</li> <li>3. Scrub you hands and nails for 20 seconds. You can sing Happy Birthday</li> <li>4. Rinse your hands under the water.</li> <li>5. Dry your hands with a paper towel.</li> <li>6. Turn of the faucet using the paper towel.</li> <li>7. Put the paper towel in the trash can.</li> </ol> <p>They will create a drama about a time when they or someone else needed to wash their hands. For example someone was playing with their puppy and it was time to eat. They will act out the scenario and then as a group they will teach you the process of how to properly wash your hands.</p>			
2 3 4 6 7 8	<p>TLW will connect hand hygiene with maintaining their health. (D) (*not WA State Standards)</p> <p>Communicate honestly about their investigations, describing how observations were made and summarizing results. (D)</p> <p>Accurately describe results, referring to the graph or other data as evidence. Draw a conclusion about the question that motivated the study using the results of the investigation as evidence.(D)</p>	4 day	<p><b>Brainstorming, Experimentation, Role Playing</b></p> <p>Demonstrate proper hand washing technique</p> <p>Follow up from the bacteria growth experiment. Explain why more bacteria grew in the “before washing” plate</p> <p>Make observations about why some bacteria might have grown in the “after washing” plate.</p> <p>How to keep germs from spreading - WASH YOUR HANDS!</p> <p>Commercial: How to properly wash your hands</p> <p>Pass the plates back out.</p> <p>Have students draw a picture of what</p>	Culture plates	Handwashing Steps Commercial/ Group Participation	



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APPC	Describe a problem that people in different cultures around the world have had to solve and the various ways they have gone about solving that problem. (E)		<p>they see on each side. One side of their paper should be labeled before and one side labeled after.</p> <p>Ask the students:</p> <p>e. Did washing your hands thoroughly make a difference?</p> <p>f. What differences do you see between the before and after?</p> <p>g. Why do you think they are different?</p> <p>What are some diseases or sickness that have spread quickly in Haiti or the Dominican Republic and how could we help keep these diseases from spreading (for ex: cholera outbreak in 2010.)</p> <p>Break the class up into 2 groups and have them come up with a commercial on how to properly wash your hands. Have them write down what they are going to say. OR do the commercial as a group.</p>			
2 3 5 6 7 8	TLW speak with an expert to learn more about germs and how we can keep our bodies healthy. (E) (*not WA State Standards)	2 days	<p><b>Brainstorming, Expert</b></p> <p>Students will generate questions that they might have for the doctor about germs and take a trip to the doctor's office to ask about germs. Possible questions: Cuanto tipos de germeneshay? Como nosotros contraemos germeneshay? Como se enferman las personas con germeneshay? Cual es la diferencia entre bacteria y virus? Como veo los germeneshay? Como me cuido de los germeneshay? Como los germeneshay crecen dentro de las personas? Que seria la vida sin germeneshay?</p>		Students will come up with a question for the doctor.	



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2 3 4 5 7 8	TLW learn how you can stay healthy so that your body can fight off germs. (E) (*not WA State Standards)  Give an example in which the application of scientific knowledge helps solve a problem. (E)	4 days	<b>Brainstorming, Peer Sharing, Hands On Activity</b> What are things that people do that are unhealthy? Make a list on the board (let kids come up and write their answer) What are things that people do that are healthy? Make a list on the board (let kids come up and write their answer) Half of the class draws pictures that go with the unhealthy list. They cut them out and paste them on the list Half of the class draws pictures that go with the healthy list. They cut them out and paste them on the list. Why do we need to keep our bodies healthy? If we know how to keep our bodies healthy can that help to fight off germs? Hang this outside of the classroom to share with others the healthy and unhealthy choices we can make. Break up students into four groups and have them create a drama that promotes healthy living. Topics to use: 1. Drinking enough water 2. Sleeping 8 hours 3. Eating healthy food 4. Exercising	Crayons, paper, class poster	Drama/Group Work Participation	