

Introduction/Overview

This lesson spans the curriculum of Science, Healthy YOUth and Character Counts. Understanding and preventing infectious disease incorporates all of these aspects. This lesson provides concepts and activities to address each.. The format may be adapted to use selected components for one lesson or multiple.

Lesson Plan– Lesson Goal

Lesson Goal: Lesson Goal: To Understand how disease is spread and practice personal actions to prevent the spread. To understand that when we take care of our personal health, we also protect others and help slow or prevent the spread of infectious disease.

➔**Key Understanding - Healthy YOUth:** An important part of being healthy is to prevent infections. Just as our eating habits, exercise and taking care of our mind help us to be healthy so do personal habits that prevent the spread of infections.

➔**Key Understanding - Character Counts:** Public health is part of being a good citizen. We all share responsibility in preventing the spread of infectious disease and leading a healthy lifestyle. It is important to understand and respect others.

➔**Key Understanding - Science:** Understanding the nature of infectious disease and how disease spreads affects all aspects of our life. Our actions can affect how disease spreads among individuals.

- ◆What do we mean by ‘infection’?
- ◆How do you get an infection?
- ◆Practice strategies to prevent the spread of infection.
- ◆Understand how our health can be affected.

Introduction

- ☞ Introduce yourself to the group
- ☞ Stand where everyone can see you and hear what you say

- ◆Welcome students to Healthy YOUth / Character Counts
- ◆Provide an overview of the program – review lessons completed.

Reflection from prior lesson (This lesson may stand alone for either curriculum.)

☞ In your own words share:

- If we are healthy, we are less likely to get sick with a cold or flu.
- (HY) Our personal habits can also help keep us from getting sick and others from getting sick.
- (CC) Practicing positive character traits of responsibility, respect and citizenship helps everyone stay healthy.
- The things we do to prevent illness, or the fear of illness can make us anxious or depressed.

Opening Activity – 5 to 10 Minutes

☞ Balloon Bop / Germs are Everywhere (petroleum jelly and either nutmeg or glitter OR Glo Germ and Ultra-Violet light)

☞ Prior to the lesson, coat your hands and a few balloons (3 to 5) with either petroleum jelly (Vaseline) and either nutmeg or glitter OR Glo Germ.

◆ Explain to students that you will play a game to keep all the balloons in the air. Start with one balloon, tossing it to the students. Take turns hitting the balloon to keep it off the floor.

- Introduce additional balloons, play the game for 3 – 5 minutes.

◆ After the allotted time, collect the balloons. (You will be examining them, their hands, clothes and surroundings for ‘germs’.)

Relating Activity/ Experience to how germs spread (Anchor) 5 minutes

☞ **Lead a discussion about ‘germs’ and how people get sick:**

- What happens when you get a cold?
- How many of you have had a cold?
- When we you sick, was anyone else in your family sick?

◆ Has anyone ever heard of ‘germs’?

◆ What are germs? (very small micro-organisms that we can’t see that may cause disease)

◆ How are germs spread?

◆ **Have students look at their hands – do they have glitter or nutmeg on them or if using glo germ, use the ultraviolet light to examine hands.**

- **What do they see? (nutmeg or glitter)**
- **Where did it come from – the balloons**
- **Where all can we find the nutmeg or glitter**
 - **Hands, balloons, clothes, surroundings**

◆ **Think of the glitter/nutmeg/glo-germ as a ‘germ’**

Where did they come from? How did we get them?

☞ **So, germs are everywhere**

Processing – *Can we make some choices that will help us stay well and prevent the spread of germs?* (Add)

☞ **In your own words:**

☞ **Explain:** Germs are everywhere. Germs can make us sick. Some of us can be very sick and some of us will not. We all need to practice habits to protect ourselves and others.

Creating a Vision: How we get sick – Infectious Disease (Content Delivery)

☞ **Share the goal of today’s lesson: After today’s lesson you will be able to**

◆ Explain how germs spread. (Science)

◆ Practice personal habits/actions to prevent the spread and stay healthy. (HY)

◆ Understand that practicing positive character: being responsible, being respectful and being a good citizen; are also important to preventing the spread and keeping people healthy. (CC)

◆ Identify COVID 19 as a concern for the community.

◆ Things that we do to protect physical health (keep us from getting sick) like being alone, not playing with friends; may affect our emotional health. We may become sad or anxious.

☞ Content Delivery:

☞ Current Concerns: COVID 19 – Coronavirus

➔ Lead discussion

When I say: 'COVID-19' Or Coronavirus, what do you think?

➔ Facilitate discussion/feelings

Explain: Coronaviruses are a type of virus. There are many different kinds, and some cause disease. A newly identified coronavirus, SARS-CoV-2, has caused a worldwide pandemic of respiratory illness, called COVID-19. (<https://www.hopkinsmedicine.org/health/conditions-and-diseases/coronavirus>)

☞ Define Pandemic: an epidemic or disease that occurs worldwide or over a large area – a lot of people are affected.

☞ General Understanding: COVID -19/Coronavirus is an infectious disease.

➔ In simple terms, infectious diseases are spread by germs. Today we are going to look at how infectious diseases spread and how we need to protect ourselves and others. When we take care of ourselves, we also help take care of our friends and family.

WHAT YOU NEED TO KNOW

- Explain:

Select from the following options:

1. **Demos: How do Germs Spread (Resource for instructions for each experiment:** Unit 1, Introduction to Infectious Diseases, Instructional Activities for ages 9 - 12. P-KIDS infectious disease workshop, Made possible by grants from the Northwest Health Foundation
<http://www.pkids.org/files/pdf/idw/9121.pdf>

(NOTE: If assistance can be obtained, consider conducting these demos as 'stations' through which small groups of students rotate.)

- **Germs can spread through the air – cornstarch demo** – place a small amount of cornstarch on your hand and blow into the air,
 - observe and discuss how the cornstarch travels (do not breathe in).
- **Germs can spread through droplets – spray mist (coughs and sneezes) – use a spray bottle filled with clean water to simulate a sneeze (You may wish to add food coloring to the water.)**
 - **Observe and discuss how droplets travel, where do they land?**
 - **What would happen if I was next to you?**
 - **Where else do the droplets land? (objects)**
- **Germs can spread from objects and each other – balloons, other objects that now have nutmeg or glitter, our faces, hands, food – wherever and whatever we touch**

- Observe and discuss where they can find the glitter / nutmeg
- Germs can spread from each us to someone else – balloons
 - Observe and discuss how the glitter/nutmeg traveled from balloons to objects, hands and clothes, etc.
- Germs can spread when we go to the bathroom
 - Think of changing a baby’s diaper – can germs spread from a dirty or wet diaper? When we go to the bathroom, germs can spread.
 - What can we do? (Wash hands)

OR

1. Read a story about the spread of germs.
 - a. Discuss different ways germs are spread.

Key Point

• Germs are micro-organisms that can spread disease. It is important to be as healthy as we can be. Germs are everywhere!

- We can each do things to stay healthy.
- What we do to stay healthy affects other people and their health.
- We show that we are **Responsible** when we practice healthy habits.
- We show **Respect** when we think of others and help protect each other from germs.
- Doing our part to prevent the spread of disease is being a good **Citizen**.
 - We all need to be responsible for keeping things clean.
 - We need to respect other’s things and personal space.

→ Covid-19

- List the things done in your community, school, state because/relating to COVID-19
 - School closed
 - Everyone was asked to stay home
 - Could not get together with friends
 - Your parents may not have been able to work

← WHY?

Activity: Blindfold students and give each a small nerf ball or whiffle ball. Ask students to play catch (while blindfolded) with the other students. Students should count how many times they catch a ball or get hit with a ball or another student.

After a few minutes of play, ask students to remove blindfolds and return balls.

→ Questions and Discussion: What was it like to play catch like this, what happened?

← Solicit responses:

- hard,
- couldn’t see the other person,
- did not know who to throw to,
- Did not know how to respond, where to look
- Confusing. Uncertain

← **Summarize:** COVID-19 is a new virus and just like playing in the dark with blindfolds, we are learning how it works and what it will do.

- It is contagious – meaning it transfers from person to person easily

- Some people get very, very sick and others do not
- We are learning how to treat someone that gets sick
- We don't know how to prevent it
-

☛ **Summarize:** Because we don't know a lot about Covid-19, we are doing a lot of things to prevent and slow the spread. These things also help prevent the spread of other infectious diseases.

☛ **Summarize:** This uncertainty may also affect how we feel emotionally. When we cannot see our friends/ or go to school, participate in activities; we might be angry or sad. Talking to people or using electronic communication (video conferencing) can help. Not being able to do 'normal' or planned activities is hard.

Application and Reflection (Apply)

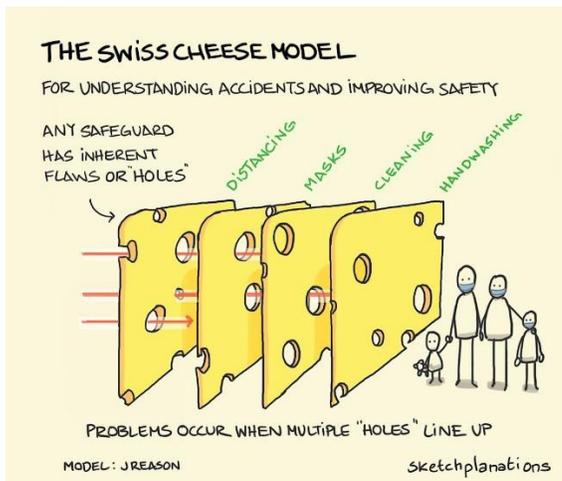
☞ **Generate solutions:** Think about our demonstrations. If those were germs, what are things we can do prevent spreading germs

- **Wash hands** – the single most important thing we can do!
 - When should we wash our hands? Discuss
Key Times to Wash Hands (CDC.gov)
 - **Before, during, and after** preparing food
 - **Before** eating food
 - **After** blowing your nose, coughing, or sneezing
 - **After** touching an animal, animal feed, or animal waste
 - **After** handling pet food or pet treats
 - **After** touching garbage
 - **Before and after** caring for someone at home who is sick with vomiting or diarrhea
 - **Before and after** treating a cut or wound
 - **After** using the toilet
 - **After** changing diapers or cleaning up a child who has used the toilet
- Cover mouths – cough into elbow, face coverings
- Stay home when sick
- Personal Space – relate to cornstarch and droplets,
- Do not touch other people's things
- Keep things clean – wash items with soap and water or disinfectant cleaners

◆Key Understanding / Analogy (Science)

→ I have here some 'Swiss Cheese'

- Has anyone ever had swiss cheese?
- What can you tell me about the appearance of swiss cheese?
 - Holes in it.
 - If I stack the slices together, what happens to the holes,
 - they don't necessarily 'line up' but sometimes they do, OR maybe two of three of them line up?



((@sketchplanations/J. Reason)

(♦Background Info: The model was developed by James Reason, a professor at Manchester University, in 1990. He wanted to show how multiple 'barriers', intervention or precautions could help lesson risk. This model is used in health care, risk management and many other fields. Using multiple strategies, helps reduce our risk: [Swiss Cheese Model](#)

→Let's look at our list of personal habits we can do like 'swiss cheese'

- Wash our hands – very important! (hold up one slice of cheese) But are there holes for germs and infections to get through?
- Let's add another habit – cleaning, (add a slice of swiss cheese) Now what, did it block some holes? Are there still holes?
- We talked about social or physical distance – (add another slice of cheese) More holes are blocked, but are there still holes?
- One more thing, wear a mask (add another slice of cheese) Do we still have holes?
- **The more safeguards we use, the fewer holes we have in transmitting disease.**

→**To prevent the spread of infection, we need to do more than one thing.** There are many times when we do multiple things to prevent or help. For example, when it is cold outside

- You probably wear a coat, does your coat protect your hands?
- So, what do you do? (wear gloves or mittens)
- Does the coat protect your head?
- So, what do you do? (wear a hat, a hood or head band)

☞ **Practice personal habits to prevent the spread – Demonstrate or practice each of the following:**

- Handwashing

Follow Five Steps to Wash Your Hands the right way. (CDC.gov)

<https://www.cdc.gov/handwashing/pdf/wash-your-hands-fact-sheet-508.pdf>

1. **Wet** your hands with clean, running water (warm or cold), turn off the tap, and apply soap.
2. **Lather** your hands by rubbing them together with the soap. Lather the backs of your hands, between your fingers, and under your nails.
3. **Scrub** your hands for at least 20 seconds. Need a timer? Hum the “Happy Birthday” song from beginning to end **twice**.
4. **Rinse** your hands well under clean, running water.
5. **Dry** your hands using a clean towel or air dry them.

→Use hand sanitizer when you **can't** use soap and water. Hand sanitizer is not as effective as soap and water when our hands have dirt or grease.

How to use hand sanitizer

- Apply the gel product to the palm of one hand (read the label to learn the correct amount).
- Rub your hands together.
- Rub the gel over all the surfaces of your hands and fingers until your hands are dry. This should take around 20 seconds.

- How to cough and sneeze
 - Cough into elbow or sleeve
 - Use tissue – what do we do with used tissues?
 - Wash hands!
- Physical or social distance: Stay 6 feet away from another person, protect your personal space or that of others. (Face masks are recommended when you will not to be socially distant.
- Face masks are also a way to protect others from coughs and sneezes and transmitting germs. Face masks are a recommended way for you to protect **others** from your cough and sneezes. (see <https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/diy-cloth-face-coverings.html>)
 - How to wear face masks
 - What is the best type of face mask
 - When and where to use face masks
 - Washing and care of masks
- Keep things clean
 - What should we keep clean?
 - Clothing
 - Work area
 - Personal items – combs, play items (balls)
 - How do we clean them?
 - Soap and water

- Cleaning wipes or towels
- Personal space and property – do not share personal items, discuss examples: hats, combs, etc.
- **Avoid touching eyes, nose, and mouth**

Mental Health: Brainstorm how we can handle feelings of fear and frustration.

Practice

☞ I can stop the spread (handout)

- Each student identifies by drawing or writing three things they will do to prevent spreading germs

OR

☞ As a class, or in a small group, create a mnemonic (memory aid) to remind students of basic steps

Example: WARP=

W - Wash your hands

A - Avoid touching face with hands

R - Respect other's things

P - Personal space

WASP=

W - Work area is clean

A - Avoid touching face with hands

S - Soap your hands for the ABC

P - Personal Space

S - Soap your hands while singing ABC

A - Avoid touching face

F - Face masks can help protect

E - Everyone should respect others personal space and things

Summarize Key Concepts

☞ We can all do things to keep from spreading germs and stay healthy

Science

- Understand how germs spread disease
- Infectious disease affects everyone

Healthy YOUth

- Practice good personal hygiene
- Washing hands
- Keeping things clean
- Be mindful of you feel and talk to someone when needed.

Character

- Respecting others property
- Be responsible – stay home if you are sick
- Be a good citizen

Assessment and Goal Setting (10 Minutes) (Away and Goal-Setting)

☞ Popcorn activity

→Students 'pop up' if they know the answer.

- What is the number one thing we can do to protect ourselves and others?
 - Wash hands
- What should you do if you cough?
- What should you do if you sneeze?
- Question re desks, other's things, cleaning...

OR

☞ Students create a poster that shows of the following:

- Understanding of germs and how they spread (Science)
- A healthy hygiene habit or practice (HY)
- How they can be a good citizen (CC)

☞ Create a booklet

Your booklet should include the following:

1. A book cover with a title.
2. Pages that address concepts discussed: students explain or draw pictures

Examples:

- *Science: understanding germs and how they spread, the 'swiss cheese concept'*
- *Healthy YOUth: hygiene habits, washing hands, how to cough, cleaning space*
- *Character: respect space and things, being responsible – practicing a healthy habit`*

Resources/Notes

'Use of Masks to Help Slow the Spread of COVID-19' June 20, 2020, Center for Disease Control. (cdc.gov)

Retrieved from:

<https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/diy-cloth-face-coverings.html>

'Stop Germ, Wash Your Hands' Center for Disease Control. (cdc.gov) retrieved from:

<https://www.cdc.gov/handwashing/pdf/wash-your-hands-fact-sheet-508.pdf>

Lessons ON COMMUNICABLE DISEASE PREVENTION K-12 Student Services/Prevention and Wellness Team WISCONSIN DEPARTMENT OF PUBLIC INSTRUCTION. ELIZABETH BURMASTER, STATE SUPERINTENDENT.

Retrieved from: https://dpi.wi.gov/sites/default/files/imce/sspw/pdf/k_12communicable.pdf

Unit 1, Introduction to Infectious Diseases, Instructional Activities for ages 6 – 9; Unit 1, Introduction to Infectious Diseases, Instructional Activities for ages 9 - 12. June 2004 P-KIDS infectious disease workshop, Made possible by grants from the Northwest Health Foundation. Retrieved from:

<http://www.pkids.org/files/pdf/idw/691.pdf>

<http://www.pkids.org/files/pdf/idw/9121.pdf>

'What is the 'Swiss cheese model' and how can it apply to coronavirus?',
D'Amore, Rachel, October 13, 2020.

Our Partners

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