Care & COVID

HEAL

A 10-hour program for 3rd-5th grade youth designed to explore socio-scientific issues related to contagious disease prevention through photography, personal narratives, and hands-on STEM activities.

WASHINGTON STATE UNIVERSITY

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We are grateful to our community partner organizations for their support in implementing and evaluating Care & COVID. We are especially grateful to the children and families in our partner communities who have engaged with and helped us improve Care & COVID.

Finally, we are grateful to YOU for engaging with this curriculum!

Stay connected! Share your artwork!

We would love to hear from you! To learn more about HEAL or to get in touch please check out our website: https://heal.coe.wsu.edu/

Our website includes a digital scientific art gallery where we feature art created by children who participate in our programs. Check out our gallery!: https://heal.coe.wsu.edu/student-gallery/

If your students would like to have their art featured please reach out to our team by going to our website or emailing Dr. Molly Kelton: molly.kelton@wsu.edu

Care and COVID Overview

Care and COVID explores the socio-scientific issues related to protection from contagious diseases, specifically the novel coronavirus (COVID-19), through photography and hands-on STEM activities. It is a 10-hour curriculum that can be flexibly implemented in classrooms or informal spaces. The curriculum is broken into five, two-hour segments. Each segment has a different focus, with segments two through four focused on protection from COVID at different scales.

1. Introduction to Photography
2. Care and Self: protecting oneself from contagious disease
3. Care and Community: protecting one's community from contagious disease
4. Care and the World: protecting the global community from contagious disease
5. Capstone: community art show

Each segment includes one hour of arts-based STEM activities to explore content around pathogens and contagious disease, and one hour for youth to engage with various photographic activities (e.g., self-portraits, tableaus, photo narratives). The module ends with a capstone project where youth tell a story of protection from COVID through their photographs.

Care and COVID is designed to be implemented as a whole, with youth completing the segments in order. This allows for scaffolding their engagement with concepts of photography and the science of COVID protective measures. As youth consider protection from COVID on different scales, the module encourages them to make connections across these scales. For example, students will explore the relationship between mask-wearing and protecting their community from COVID.

Care and COVID serves as a platform for learners to process their experiences with the COVID-19 pandemic, and learn about the science of contagious disease prevention. Throughout the curriculum are examples of other disease-causing pathogens that are spread and prevented similarly to COVID-19, such as Influenza ("the flu") and rhinoviruses ("the common cold"). Facilitators can decide if they would like to include these other pathogens in discussions or as photography subjects.

Art Overview

Care and COVID focuses on *photography* as a primary means of exploring social and scientific aspects of COVID protection measures. Learners delve into the idea that photography can be used as an inquiry tool (a way to learn new things) and as a storytelling tool (to communicate things to others). Photography concepts of composition (rule of thirds) and perspective (vantage point) are practiced and incorporated throughout the module. Learners also engage in theatrics as they create and perform skits and photographic self-portraits to tell their own COVID stories, explore photographic narratives about COVID, and create multi-media narratives using sketches, videos, and photographs.

The curriculum also focuses on Visual Thinking Strategies, inquiry-based teaching methods that improve a learner's ability to describe, analyze, and interpret imagery and information through observing and discussing visual art. Visual Thinking Strategies are a core part of this curriculum, asking learners to engage in prompts like “What’s going on in this picture?” and “What more can we find?” The curriculum culminates in a capstone project where learners use their artwork to tell a cohesive story of protection from COVID, to be put on display in a celebratory art show.

Science Overview

It is not necessary to have an extensive science background to facilitate the Care and COVID curriculum. This curriculum focuses generally on the ways in which individual and social behavior, such as self-protective measures and scientific communication, can influence disease spread. Science background and alternative pathogen systems sections are embedded within each segment to aid in your understanding of respiratory disease spread at individual, community, and global scales.

Care and COVID explores the science of contagious disease prevention at varying levels of complexity. Through this curriculum, learners will explore self-protective measures of disease prevention, such as wearing a mask, washing your hands, not touching your eyes/mouth/nose in public, standing 6 feet apart from other people, staying home if you feel sick, and getting vaccinated. Learners will engage in community-level thinking about how sharing space with other people might put us at potential risk for spreading pathogens to one another. This discussion will lean on applying self-protective measures to how you interact with other people on a larger scale, and how different people might have different health concerns. Learners will explore how they can use their artistic skills to communicate disease risk to an audience, and how that science communication might help to prevent the spread of disease.

Care and COVID Tech Considerations

Tablet:

- Pros:
    - High engagement
    - High versatility – can take different types of photos (e.g., panoramic, portrait) and videos (e.g., slow motion)
    - Can hold many photos
    - Can add applications for editing photos (e.g., Lightroom, Photoshop)
    - Can add applications for sharing photos (e.g., Google Drive, Dropbox)
    - Compatible with most macro lenses (see Segment 3)
- Cons:
    - Price (wide range considering quality and brand)
    - Fragile (adding cases creates additional expense)
    - Storing may be more difficult
    - Youth may have challenges in sharing tablets with one another (if one per youth not an option)
        - *Could supplement with other type of camera (½ tablets, ½ alternative)*
    - Can be distracting – may need to monitor youth for using tablets for other purposes (e.g., games, social media)
    - May require wifi – large number of tablets transferring photos can be difficult on bandwidth
- Printing:
    - Can connect wirelessly or directly to most modern printers
    - May require on-the-stop troubleshooting
    - May require high quality wifi
    - Relatively easy to send in for printing (i.e., 1-hour photo) because files are already electronic
- Sharing:
    - Electronic photos can be projected onto screen
    - Photos can be printed for sharing
    - Sharing can occur directly from the tablet itself
    - May require high quality wifi

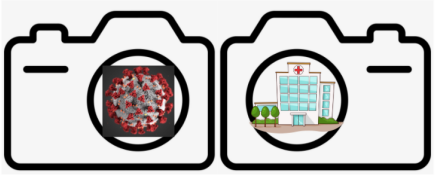
Digital Camera:

- Pros:
    - Less expensive than tablets
    - Potentially more durable than tablets
    - Cases (or additional protective hardware) not usually required
    - Can take a few different types of photos (e.g., zoom in and out, video)
    - Maybe less distracting than tablets
    - Less need to monitor or limit functionality
    - Can hold many photos

    - Does not require wifi
- Cons:
    - May be less engaging – although the old digital camera is coming back into style
    - Need to connect to a computer to upload photos
    - Less versatility with types of photos and videos
- Printing:
    - May need to upload photos to computer or printer manually before printing
    - A little more difficult to send in (i.e., 1-hour photo) because of need to upload photos off camera
- Sharing:
    - Extra step to upload photos in order to project them on big screen
    - Photos can be printed for sharing
    - Sharing may not be easy to share directly from the camera itself

Polaroid Camera (or similar):

- Pros:
    - Nostalgic for the adults
    - Novel to youth
    - Relatively affordable (compared to tablets)
    - May be less distracting than tablets
    - Less need to monitor or limit functionality
    - Do not have to purchase or manage printers
    - Does not require wifi
    - No need to upload anything – it's an all-in-one (although a limited all-in-one)
- Cons:
    - Less versatile than any other option – only takes photos
    - Limited number of photos taken (youth will not be able to take pictures endlessly)
    - Photo paper is expensive
    - Photos are relatively small
    - Cannot have electronic version of photos for later uses (e.g., reprinting for art show) – need to save physical copies
- Printing:
    - Printing is all taken care of
- Sharing:
    - Youth share printed photos physically rather than electronically



Segment One Facilitation Guide
Introduction to Photography

Overview

In this segment, learners are introduced to Care and COVID and the primary art modality they will be using – photography. Learners will be introduced to the idea that photography can be used as an inquiry tool (a way to learn new things) and as a storytelling tool (to communicate things to others). This segment includes development of two collaborative community agreements around using, sharing, and caring for photography equipment (e.g., tablets, cameras), as well as discussing one another's photos. Activities center around taking photos (both freely and with some direction) and discussing photos (particularly photos that tell stories of the COVID pandemic). By looking at COVID photos, photography concepts of composition (rule of thirds) and perspective (vantage point) will be introduced to learners. Learners will practice incorporating these key elements of photography that will be featured throughout the curriculum.

Big Ideas and Questions:

- How can a photo tell a story?
- What strategies can be used to figure out the story a photo is telling?
- How do we commonly agree to use, share, and care for our photography equipment?
- How do we agree to commonly discuss others' photos?
- What is the composition of a photo?
- What are different perspectives a photo can be taken from?

Grade Level/Age

3rd - 5th grade (approx. ages 8 - 11)

Objectives and Assessment (Science and Art)

Objective	Assessment
Learners interpret key ideas and details of photographs related to COVID and storytelling using visual thinking strategies.	*Learners identify specific attributes of photographs using language like "I see" or "I think" and "because" during discussion.*
Learners infer additional meaning and context of photographs using ideas/criteria of	*Learners use composition, framing and perspective-related vocabulary to interpret*

composition.	*photographs.*
Learners use new understanding of composition, framing and perspective to take more meaningful photos.	*Elements of composition, framing and perspective are apparent in photographs.*
Learners use new tools of interpretation to discuss classroom photos, respectfully.	*Small and large-group conversations reflect learning agreements and new concepts.*

National Core Arts Standards

Anchor Standard #1: Generate and conceptualize artistic ideas and work.
Anchor Standard #2: Organize and develop artistic ideas and work.
Anchor Standard #4: Analyze, interpret, and select artistic work for presentation.
Anchor Standard #6: Convey meaning through the interpretation of artistic work.
Anchor Standard #7: Perceive and analyze artistic work.
Anchor Standard #8: Interpret intent and meaning in artistic work.
Anchor Standard #11: Relate artistic ideas and works with societal, cultural and historical context to deepen understanding.

Next Generation Science Standards

Disciplinary Core Ideas

- ESS3.B Natural Hazards: A variety of natural hazards result from natural processes. Humans cannot eliminate natural hazards but can take steps to reduce their impacts.

Science and Engineering Practices

- Asking Questions and Defining Problems
- Planning and Carrying Out Investigations
- Constructing Explanations and Designing Solutions
- Obtaining, Evaluating, and Communicating Information

Crosscutting Concepts

- Scale, Proportion, and Quantity
- Patterns: Observed patterns of forms and events guide organization and classification, and they prompt questions about relationships and the factors that influence them.

Time

2 hours

Materials

- COVID Photos (electronic or printed) – see COVID photos slide deck
- Poster paper or other large paper for writing Community Agreements
- Markers or other writing utensils for Community Agreements

- Cameras for each learner or small groups
- Space for gathering and sharing COVID photos and photos taken by youth. Options include:
    - Large screen and projector for whole-group sharing
      and/or
    - Printed photos or small screens (e.g., tablets or phones) for small groups/individuals
- Slide decks:
    - COVID photos
    - Composition/Rule of Thirds
    - Vantage Point Photos
- Projector, screen, and computer to display slide decks and photos (printouts could be used as an alternative)

Background Information for Facilitators

Art Background Information

- **Visual Thinking Strategies** (www.vtshome.org) is an inquiry-based teaching method that improves a learner's ability to describe, analyze, and interpret imagery and information through observing and discussing visual art. VTS uses the below phrases to get the best results from learners:
    - "Take a moment to look at this photograph."
    - (Q1) What's going on in this picture?
    - (Q2) What do you see that makes you say that?
    - (Q3) What more can we find?
    - (Q4) What do you think is happening "beyond the frame"?
- Photography concepts introduced in this segment:
    - **Composition**: how the elements (objects, subjects, background, foreground, colors, textures, etc.) of a photo are arranged.
    - **Rule of thirds**: placement of the subject in the left or right third of an image (rather than the center), leaving the other two thirds more open. If you break the image into three pieces, the subject is more interesting if placed in one of the "thirds" (as seen in the photo on the right) and not in the center (as seen in photo on the left). In placing the subject of the photo in one of the thirds, it creates a more dynamic photo. This encourages viewers to look more at the entire image, rather than just glancing at the center of the photo.

- **Vantage point:** the place from which the subject of the photo is being seen. Different vantage points can elicit different emotions. For example, a long view photo may elicit a feeling of vastness or loneliness, whereas a close up photo may elicit a feeling of intimacy. A bird's eye view may offer a feeling of freedom in a photo and a worm's eye view may give a sense of power to the subject of the photo. In this segment, we introduce the following vantage points:
  - Close up: close to subject
  - Long shot: far from subject
  - Side view: side view of subject
  - Birds eye view: from high above subject
  - Worms eye view: from far below subject

Science Background Information

- No science background information is required for this segment.

Preparation

- Make sure all cameras are charged and ready for use.
- Decide how to project or share COVID photos for discussion – physically or electronically?
- Decide how to gather and share learner's photos – Options include online cloud storage (i.e., creating file folders for each student), printing physical copies, or passing around tablets/cameras.
  - Part B of this segment has learners share and discuss their photographs with one another. How this is organized and facilitated is largely dependent on the facilitator's preferences and the learning environment. Learners' photos can be projected to a screen, printed and passed around, posted around the room and presented as a gallery, or shared directly on tablets etc.

Facilitation Guide

Part A (approximately 1 hour)

- Welcome and introduce facilitators (10 minutes)
  - Introduce yourselves as facilitators

    - Introduce goals for the module
        - To explore ways we can be protected from COVID and other pathogens, like COVID, that can cause disease.
        - To learn how photos can tell interesting stories and to practice telling stories through photos that we take.
            - Show a few COVID photos here to demonstrate storytelling
        - To use photography to tell the story of our experiences with COVID and other pathogens in different ways.
        - Throughout the curriculum, we are going to be exploring science and art at the same time!
- Create and discuss Community Agreements about using/sharing cameras (10 minutes)
    - Create a shared poster with learners' voices about how to best handle/share photography equipment.
    - What these agreements end up being is dependent on the type of camera equipment you end up using, your specific rules for using this equipment, and any specifics you may have as to how learners need to share this equipment.
    - The goal of this conversation is to encourage learners to take responsibility for how this equipment will be handled by offering suggestions and creating a poster that reminds them of these rules.
    - As learners share their ideas about how to best care for the photography equipment, write them down on the collective poster and display this poster in the learning space throughout the Care and COVID module.
    - Some example agreements include:
        - Walking only with cameras.
        - Keep food and drinks away from cameras.
        - Only photograph others who agree to be photographed.
        - If sharing cameras, take three photos then pass along.
- Distribute cameras to learners and have them freely take photos while practicing the community agreements (20 minutes).
    - Use this time to assign learners cameras and to have them get the wiggles out by freely taking photos. Take note of the type of photos that they are drawn to, for example, action photos, selfies, slow motion photos, or panoramic shots.
    - After approximately 20 minutes, have learners set down cameras.
- Project COVID photos and have learners discuss them using Visual Thinking Strategies to make sense of the story of the photo (20 minutes)
    - "Take a moment to look at this photograph"
    - (Q1) What's going on in this picture?
    - (Q2) What do you see that makes you say that?
    - (Q3) What more can we find?
    - (Q4) What do you think is happening "beyond the frame"?
    - If more conversation is needed, or the following ideas are not brought up, feel free to direct learners:
        - What's going on in this photo? What do you notice in this image?
        - Who is the subject of the image?

        - What makes you say that?
        - Where do we think this image was taken?
        - What do you think happens next (after the photo was taken)?
        - What emotions do you feel when you look at this? Why does this image make you feel this way? The colors? The person in the photo? The content of the photo?
            - Some learners may have difficulty identifying an emotion from looking at an image. If this is the case, facilitators can create a list of emotions for youth to choose from to help guide their thinking.
    - **It is not necessary to ask all of these questions about every photo in the COVID photos slide deck.** Just a few of these questions can go a long way in helping learners identify the story of a photo. The goal here is for learners to practice asking and answering questions about photos in order to explore the story a photo may be telling.

Part B (approximately 1 hour)

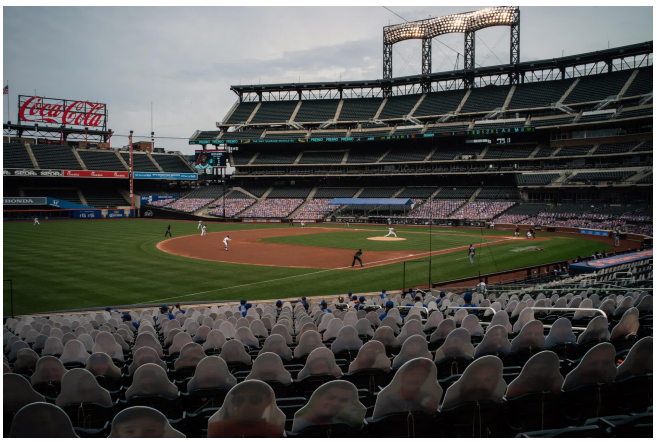
- Introduce the idea of the rule of thirds in photography using the Composition/Rule of Thirds slide deck (10 minutes).
    - Begin by asking learners what is meant by the "subject" of a photo. Broadly, the subject of a photo is who or what the photo is about. Show a few of the photos from this slide deck and ask learners: what is the subject of this photo? Learners typically catch on quickly and are able to identify the subjects of the photos as a frog, a boy with a cape, a laughing girl, a dog, a girl sitting on a rock, and a flower.
    - Rather than placing the subjects of these photos in the center, all of these photographers have placed these subjects to the left or right of center. This is called the "rule of thirds."
    - The first slide in this slide deck explains the rule of thirds more.
        - If you were to break a photo into thirds horizontally or vertically, photographers often place the subject in the left or right third of the photo.
        - This encourages the viewer of the photo to look at the whole picture, not just the subject of the picture.
    - Return to the photos in the slide deck, pointing out the gridlines and how the subject of the photo is to the left or right of the center of the photo.
- Have learners practice taking photos that use the rule of thirds (10 minutes)
    - Facilitators can have objects ready that learners can use as subjects and photograph using the rule of thirds or learners can take pictures freely again but this time try to reposition their subject considering the rule of thirds.
- Introduce the idea of vantage points in photography using the Vantage Point Photos slide deck (10 minutes)
    - Explain that photographers also like to use different vantage points, or perspectives, in their photographs. This means that they like to take photos of their subjects from different angles, for example – up high, down low, straight on,

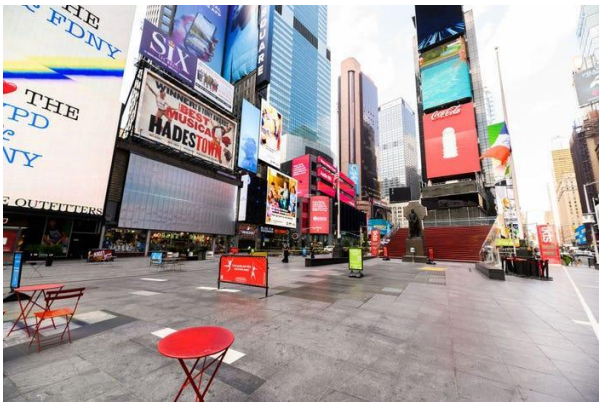
or from the side. These are called vantage points, and they can make the viewer of the photo feel different things.
    - Go through the vantage point slide deck and discuss the five different vantage points that we are focusing on – bird's eye view (up high), worm's eye view (down low), close up (zoomed in), long shot (zoomed out), and side view.
- Have learners practice taking photos using different vantage points (10 minutes)
    - Encourage learners to take a few photos using each one of these vantage points.
- Discuss Community Agreements around talking about each other's photos (10 minutes)
    - Explain that throughout Care and COVID, we are going to do a lot of sharing and discussing each other's photos. Our goal is to try to understand the story of each other's photos.
    - Similar to the community agreement around using photography equipment, have learners brainstorm agreements for how to talk about other learners' photos.
        - Example community agreements could include:
            - Use phrases such as "I like…" and "I notice…" about certain photos.
            - Listen as others talk about the photos.
            - Ask questions about others' photos, such as:
                - Why did you use this vantage point?
                - What is your favorite part of the photo?
- Select a few learners' photos, display them, and practice discussing them using Community Agreements and Visual Thinking Strategies (10 minutes)
        - "Take a moment to look at this photograph"
        - (Q1) What's going on in this picture?
        - (Q2) What do you see that makes you say that?
        - (Q3) What more can we find?
        - (Q4) What do you think is happening "beyond the frame"?

Tips for Group Participation

- There are many ways to facilitate the development of Community Agreements. Facilitators will need to consider the number of learners and the learning environment when deciding how to elicit and share learners' ideas. Some possibilities include:
    - Whole-group discussion in which students take turns sharing ideas while the facilitator writes on a poster. For larger classes the facilitator might take contributions from a subset of students - be mindful of engaging students equitably.
    - Students share ideas in pairs. Then each pair takes a turn sharing one idea while the facilitator writes on a poster.
    - Option for a large class: Break up into small groups (~3-6 learners per group). Give each group a poster and markers. Each group works together to create and write down a list of agreements. When the small groups are done, display each poster in the room. Bring everyone back together for a whole-group discussion and/or gallery walk. Depending on space, you may need to consolidate student

posters by rewriting or combining ideas onto a single poster in preparation for the next activities.


Coca-Cola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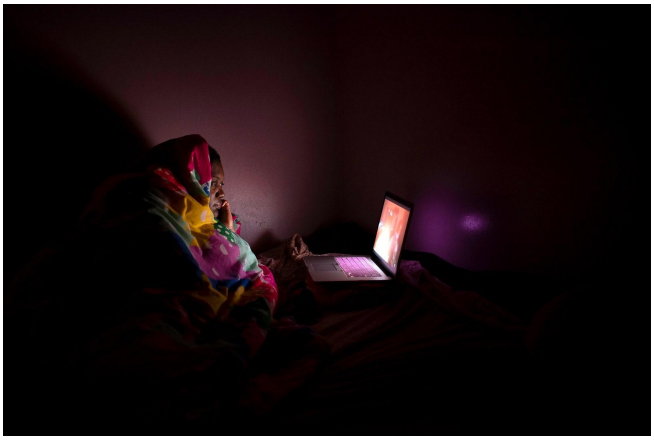
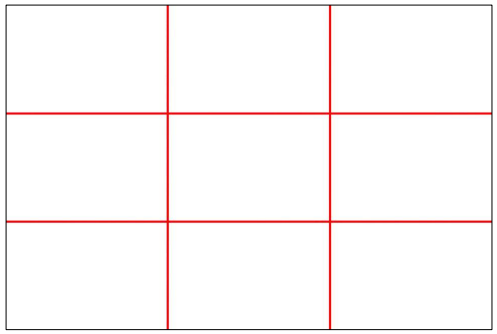
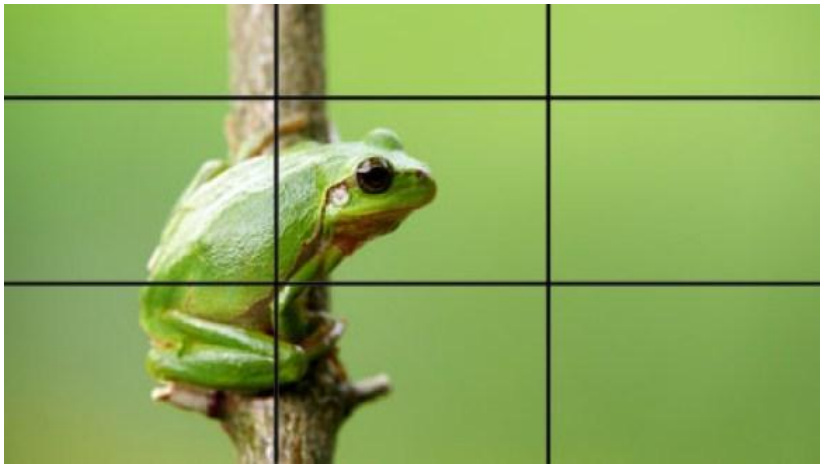
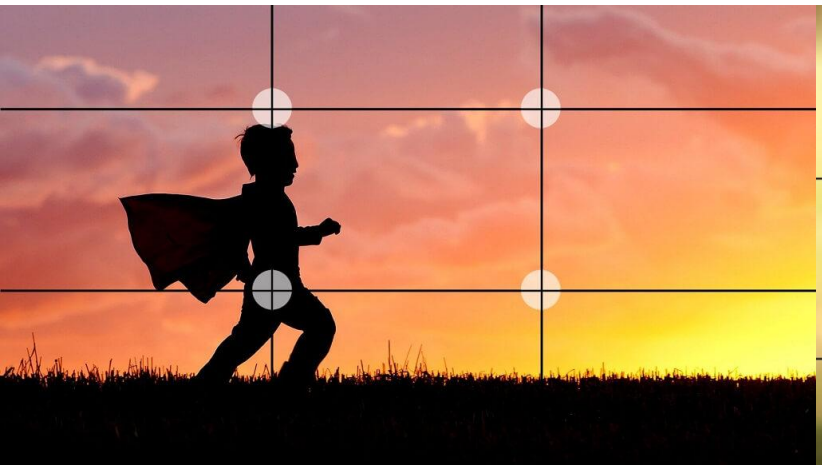


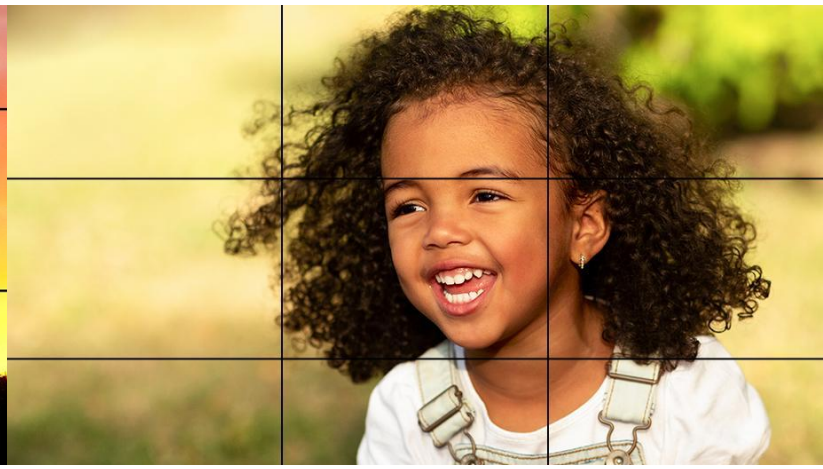
Rule of Thirds

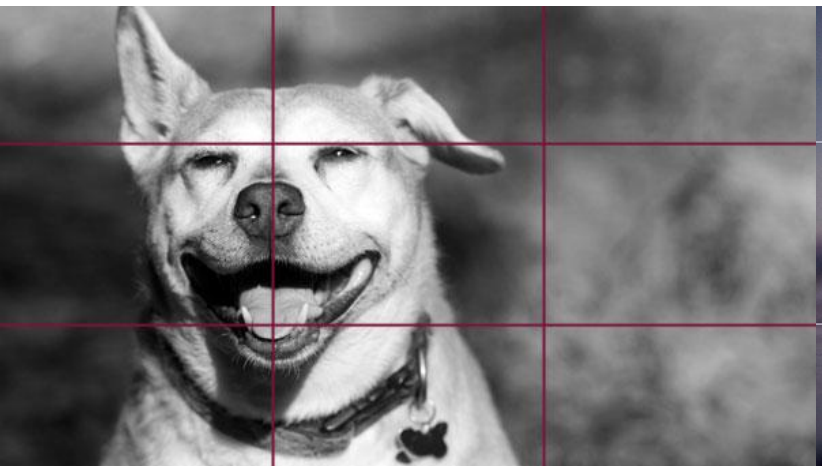


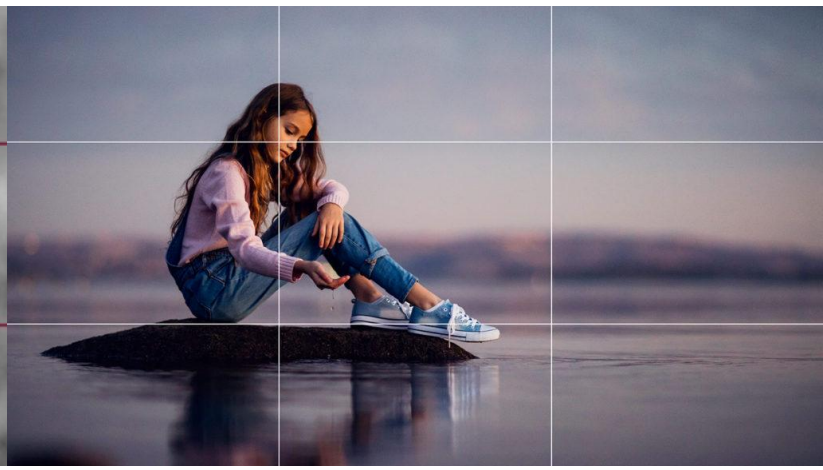
place the **subject** of a photo to the left or right of the center, along one of the gridlines











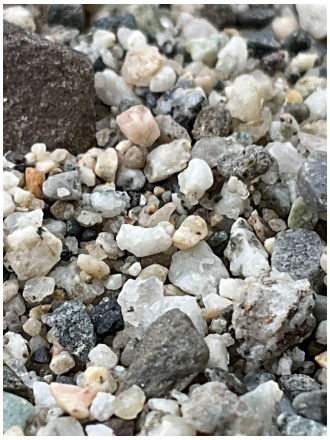
bird’s eye view photo

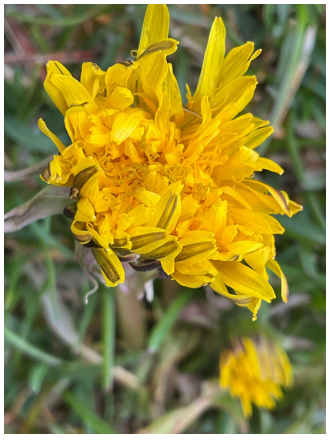
worm’s eye view photo

close up photo

long shot photo

side view photo

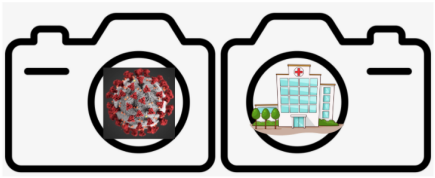




One last step!

Please answer a few questions about how this segment went. This helps us learn from you about how to improve the activities.

Scan this QR code and fill out this quick survey.



Segment Two Facilitation Guide
Care and Self

Overview

In this segment, we begin to explore the ways in which an individual can protect themselves from getting sick from the COVID pathogen, beginning with what a pathogen is and how it invades our body to make us sick. Learners will explore where pathogens live in our daily routines and environments and healthy habits to follow throughout the day using close-up photography. Learners will also engage in theatrics and photography as they create and perform skits – pausing to take tableaus depicting stories of protection from COVID. Visual thinking strategies will be used in photovoice discussions of learners' tableaus.

Big Questions and Ideas

- What is a pathogen?
- How can we help our body protect us from pathogens?
- How can we use a photograph to tell a story?
- How can we use photography vocabulary and techniques to discuss the stories in photographs?

Grade Level

3rd - 5th grade (approx. ages 8 - 11)

Objectives and Assessment (Science and Art)

Objective	Assessment
Learners understand how a pathogen invades a body to make us sick.	*Skit made by learners representative of an "invasion" or "attack" with something "precious" that gets hurt.*
Learners understand where pathogens live in our daily lives.	*Photos taken by learners represent contagion surfaces and situations.*
Learners understand ways to protect themselves from pathogen infection.	*Skit made by learners representative of an "invasion" or "attack" and a "defense."*
Learners understand ways to protect themselves from pathogen infection.	*Learners are able to select photos representing "defenses" against pathogens.*
Learners can use a photograph to tell a story.	1. *Photos by learners of skits representative of the body fighting off*

	a pathogen invasion.
	2. *Learners can tell story of pathogen invasion and the body's defense using a photograph representative of their story*
Learners can discuss and communicate with peers what they see in photographs as related to pathogen infections and defenses.	*Learners use photography and science vocabulary in group discussions, including "perspective", "angle", "point of view", "scale", "size, "framing", "action", "pathogen", "virus", "infection", "defense", "protection."*

National Core Arts Standards

Anchor Standard #1: Generate and conceptualize artistic ideas and work.
Anchor Standard #2: Organize and develop artistic ideas and work.
Anchor Standard #4: Analyze, interpret, and select artistic work for presentation.
Anchor Standard #5: Develop and refine artistic work for presentation.
Anchor Standard #6: Convey meaning through the interpretation of artistic work.
Anchor Standard #7: Perceive and analyze artistic work.
Anchor Standard #8: Interpret intent and meaning in artistic work.
Anchor Standard #10: Synthesize and relate knowledge and personal experiences to make art.
Anchor Standard #11: Relate artistic ideas and works with societal, cultural and historical context to deepen understanding.

Next Generation Science Standards

Disciplinary Core Ideas

- ESS3.B Natural Hazards: A variety of natural hazards result from natural processes. Humans cannot eliminate natural hazards but can take steps to reduce their impacts.
- LS1.A Structure and Function: Plants and animals have both internal and external structures that serve various functions in growth, survival, behavior, and reproduction.
- PS1.A Structure and Properties of Matter: Matter of any type can be subdivided into particles that are too small to see, but even then the matter can be detected by other means.

Science and Engineering Practices

- Asking Questions and Defining Problems
- Developing and Using Models
- Constructing Explanations and Designing Solutions
- Obtaining, Evaluating, and Communicating Information

Crosscutting Concepts

- Cause and Effect: Cause and effect relationships are routinely identified.

- Systems and Systems Models: A system can be described in terms of its components and their interactions.
- Scale, Proportion, and Quantity: Natural objects exist from the very small to the immensely large.

Time

2 hours

Materials

- Projector, screen, and computer to display slide decks and photos (alternatively use printed copies)
- Slide deck:
    - Segment 2 Part A and B slide deck
- Space for gathering and sharing photos taken by learners
- Cameras
- Macro lenses (if using phones or tablets for cameras, one per camera)
- Community Agreement poster about using/sharing cameras
- Community Agreement poster for discussing each other's photos
- Assorted items to represent things that could make you sick/carry pathogens, such as:
    - Pencils
    - Coins
    - Sponges
    - Water bottles
    - Eating utensils
- Assorted items that represent things that could protect you from getting sick/protect you from pathogens, such as:
    - Masks
    - Hand sanitizer
    - Fruits and vegetables
    - Soap
    - Gloves
    - Vitamins
- Assorted skit props (we have found it helpful to have a prop box with a variety of items for learners to utilize). Fun props could include:
    - Dress up clothes (coats, gloves, hats, bodysuits, dresses, etc.)
    - Masks
    - Hand sanitizer
    - Sponges
    - Jewelry
    - Stickers
- Poster paper titled "Care and Self"
- Pencils
- Post-it notes for learner responses to Big Picture activity (see Facilitation Guide Part B)

- Optional: Materials for makeshift stage (e.g., black sheet to hang as backdrop, chairs for audience)

Background Information for Facilitators

Art Background Information

- **Visual Thinking Strategies**: is an inquiry-based teaching method that improves a learner's ability to describe, analyze, and interpret imagery and information through observing and discussing visual art. It has been proven that using the following phrases get the best results from learners/observers. Learn more at www.vtshome.org.
    - "Take a moment to look at this photograph"
    - (Q1) What's going on in this picture?
    - (Q2) What do you see that makes you say that?
    - (Q3) What more can we find?
    - (Q4) What could be going on beyond the frame of this photo?
- **Theatrics and Tableau:**
    - When performing a skit, a tableau is a "freeze" during the performance. It is a static scene containing one or more actors or models. Actors use their bodies to create dynamic "snapshots," such as "high, medium, low" placements, or "big, medium, small" shapes.
- **Photography concepts:**
    - Composition - how the elements (objects, subjects, background, foreground, colors, textures, etc) of a photo are arranged.
    - Framing - drawing focus to the subject of a photo by using other parts of the image.
    - Rule of thirds - places your subject in the left or right third of an image, leaving the other two thirds more open.

    - Perspective - the place from which the subject of the photo is being seen.
        - Close up: close to subject
        - Long shot: far from subject
        - Side view: side view of subject
        - Birds eye view: from high above subject

    - Worms eye view: from far below subject

Science Background Information

There are things that are too small to see that can make you sick (pathogens). Pathogens include things like bacteria, parasites, and viruses. COVID is one of these; it is a virus. COVID spreads through water droplets (mucus, saliva) from a sick person from when they sneeze, cough, or touch their nose or eyes. If someone else accidentally inhales or swallows those water droplets they can also become sick with COVID. There are actions individuals can take to protect themselves from COVID. This includes wearing a mask, washing your hands, not touching your eyes/mouth/nose in public, social distancing, staying home if you feel sick, and getting vaccinated. The following list explains more on how to prevent infection:

- **Wear a mask:** COVID is commonly spread from sneezing and coughing. Masks protect sneeze water droplets from sneezes/coughs from going in or out.
- **Wash your hands:** soap and water will remove pathogens from your hands. Wash your hands with soap and water for at least 20 seconds before eating/touching your face. Hand sanitizer is a good substitute if you do not have access to soap and water.
- **Don't touch your eyes/mouth/nose in public:** if you touch a surface that has COVID on it and then touch your face, you can accidentally ingest or inhale COVID. Only touch your face when you know your hands are clean!
- **Social distancing and airflow:** when you sneeze or cough, the water droplets escape your mouth and fly into the air. Keeping distance between yourself and other people can reduce your likelihood of spreading or coming into contact with these droplets. Being in spaces that have good airflow, including outside, can also reduce this risk!
- **Stay home if you feel sick:** if you feel sick (fever, sneezing/coughing, etc.) try to stay home. Resting will help your body heal faster and being physically separated from uninfected people will help prevent others from getting sick.
- **Get enough exercise and rest:** your *immune system* is how your body fights off infection. Exercising regularly and making sure your body gets enough rest can help keep your immune system strong and healthy so it is in the best possible shape to defend your body.
- **Get vaccinated:** vaccines help your body fight off infection by training your body's immune system to recognize the pathogen. Vaccinated individuals are usually sick for less time and have lower risk of severe infection. *If you are able to get vaccinated, make sure you do!* Some people are not able to get vaccinated (including people with compromised immune systems and young babies). More vaccinated people means more COVID control and prevention!

Preparation

- Make sure all cameras are charged and ready for use.
- Set up a computer and projector to display slide decks and photos. (Alternatively have these printed out).
- Decide how to project or share photos for discussion – physically or electronically?

- Decide how to gather and share learner's photos – Options include online cloud storage (i.e., creating file folders for each student), printing physical copies, or passing around tablets/cameras.
    - Part A and B of this segment both have learners share and discuss their photographs with one another. How this is organized and facilitated is largely dependent on the facilitator's preferences and the learning environment. Learners' photos can be projected to a screen, printed and passed around, posted around the room and presented as a gallery, or shared directly on tablets etc.
- Part A Preparation:
    - Equip each camera with a macro lens (if using).
    - Lay out assorted items for close up photography on tables or counters for learners to access to take photos.
- Part B Preparation:
    - Lay out props on a table for learners to easily access.
    - Optional: set up a stage for skits.
    - Hang poster titled "Care and Self" at the front of the room.

Facilitation Guide

Part A (approximately 1 hour): *What is a pathogen and how does an individual get a pathogen? Your body has natural ways to fight pathogens (immune system), but there are also actions you can take to help your body fight off pathogens.*

- Introduce Big Picture Framing using the slide deck (10 minutes)
    - Explain that throughout Care and COVID we are going to explore how we can protect ourselves, our community, and the world from COVID.
    - Show learners the first slide in the slide deck that has three concentric rectangles.
    - Explain that our goal for today is to better understand how we can protect ourselves from pathogens.
    - On other days, we are going to explore how we can protect our community and the world from pathogens.
    - Point out to learners that as we move through the activities, we will be expanding the scale of protection.
    - Use the slide deck to introduce the concept of a pathogen and have learners brainstorm ways they think they can protect themselves from these pathogens.
- Arts-based science activity part 1 (10 minutes): Pathogens are too small to see, but they can make you sick.
    - Close Up Photographic Tasks: Take pairs of photos - one that frames the item in its place in the world, and one close up (with a macro lens, if using). Take several pairs of photos of people, places and things that can make you sick, or where the pathogens may live.
- Art-based science activity part 2 (10 minutes): Washing hands, diet, exercise, rest are ways to help your body fight pathogens.

    - Close Up Photographic Tasks: Take pairs of photos - one that frames the item in its place in the world, and one close up (with a macro lens, if using). Take close-up photos of things that can help protect you from pathogens.
- Choose photo to share (5 minutes)
    - Depending on the facilitators choice and the group size, have one, a few, or all learners choose a photo that they would like to share and discuss. Discussions can occur as a whole group with one photo projected for all to see, in small groups, or as a gallery walk.
- Share and discuss photos (15 minutes) using the structure introduced in the bullet above.
    - “Take a moment to look at this photograph”
    - (Q1) What’s going on in this picture?
    - (Q2) What do you see that makes you say that?
    - (Q3) What more can we find?
    - (Q4) What do you think is happening “beyond the frame”?

Part B (approximately 1 hour): *What is a pathogen and how does an individual get a pathogen? Your body has natural ways to fight pathogens (immune system), but there are also actions you can take to help your body fight off pathogens.*

- Arts-based science activity part 1: Pathogens are too small to see, but they can make you sick (10 minutes)
    - Embodied/theatrical representation of pathogens invading body
        - Tell learners that we are going to pretend that they have something really precious, something that is really valuable to them that they want to protect.
            - Have learners stand up and act out what it would look like if they had something really precious that they wanted to protect.
            - Tell learners that we are going to pretend that there is something that is trying to attack you and hurt your precious item.
            - Have learners act out what something attacking their precious item may look like.
            - Explain to learners that the precious item that each of them has is their own body and that pathogens are things that are too small to see but try to invade your body and make you sick.
        - Explain to learners that these pathogens (invaders) that are too small to see can be found almost anywhere and can be passed from one person to another in different ways.
- Art-based science activity part 2: Washing hands, diet, exercise, rest as ways to help your body fight pathogens (15 minutes total)
    - Embodied/theatrical representation of protectors stopping pathogens from invading your body (e.g., washing hands -- washing away invaders, rest -- getting strong to fight off invaders).
        - Bring learners back together in a whole group.

        - Tell learners that we are now going to pretend that we have ways to protect ourselves from invaders making our “precious” sick.
            - Have learners stand up and act out what it would look like if we were to kill and wash away invaders that are trying to invade our precious.
            - Have learners also stand up and act out what it would look like if we were to rest up to get strong and fight off invaders.
        - Explain that today we are going to be taking a type of photo called a “tableau.” Use the slide deck to show some examples of tableaux. Explain that a tableau is a still scene, featuring actors posing for a shot. We can think about a tableau as a freeze photo from a skit.
        - Explain that a skit is a very short play (2-5 minutes) that tells a story.
        - Break into small groups of three to four learners and create a short skit about something trying to invade your precious. Learners can either kill and wash away the invaders or rest up to protect your precious (at least 10 minutes, if not more if time is available).
            - Each skit needs to have (1) a “precious”, (2) an invader, and (3) a way of protecting the precious from being invaded.
            - Encourage learners to use props to help tell the stories in their skits.
        - Have groups act out their skit in front of the whole group (10 minutes).
            - During this time, other groups take photos of the “freeze shot” from different vantage points around the actors. Note: It may be helpful for the facilitator to call out “freeze” during the performances so the audience can take the tableaux.
            - Note: It may be helpful to remind learners that they are not taking video footage of the skits, but they are taking photos.
- Photo discussion using visual thinking: Review tableaux taken of the skits. (15 minutes total)
    - Groups review photos they took and choose one to share with class. Sharing and discussing can occur as a whole group with one photo projected for all to see, in small groups, or as a gallery walk.
    - Use Community Agreements, VTS and framing, perspective and composition to talk about photos.
        - “Take a moment to look at this photograph”
        - (Q1) What’s going on in this picture?
        - (Q2) What do you see that makes you say that?
        - (Q3) What more can we find?
        - (Q4) What do you think is happening “beyond the frame”?
        - If more conversation is needed, or the following ideas are not brought up, feel free to direct learners:
            - What’s going on in this photo? What stands out from this image?
            - Who/what is the main focus of the image?
            - What makes you say that?

        - What do you think happens next (after the photo was taken)?
        - What story do you think this photo is telling?
- Big Picture Activity: How can we protect ourselves from pathogens? (5 minutes)
    - Give each learner three post-it notes and a pencil.
    - Have each learner think about three ways that they think individuals can protect themselves from pathogens.
    - Have learners write one on each post-it note and then place their post-it notes on a poster titled “Care and Self” in the front of the group.
    - Engage learners in a group discussion about the different ideas presented.

Tips for Group Participation

- Photo sharing and discussion can be facilitated in many different ways depending on your learners and learning environment. Discussions can occur as a whole group with one photo projected for all to see, in small groups, or as a gallery walk with learners walking around the room where some/all of the photos are on display.
    - For small groups and gallery walks, consider posting the VTS questions in written form in the classroom to remind learners of the discussion prompts.
    - For small groups, you could ask small groups to work together to create a poster (using words and/or drawings) that shares some responses to the VTS questions.
    - Gallery walks can be especially helpful if you have a large number of learners and/or your learners need to “get some wiggles out.” You can make a gallery walk “interactive” by giving learners small post-it notes and pens/pencils where they can write and post by each displayed photo short responses to one or more of the VTS strategies.
    - If you are working with a large group of learners, you may need to select a subset of learners to share their photos. If this is the case, pay attention to making sure that, over the course of the curriculum, all learners eventually have an opportunity to share.
- During Part B, learners may require additional facilitation to develop their stories. Plan on circulating across the small groups during this time in case more support is required. You can prompt learners back to the key features of the skit: (1) a “precious”, (2) an invader, and (3) a way of protecting the precious from being invaded. At the same time, make plenty of room for learners’ imagination and creativity!

Extended Science Background

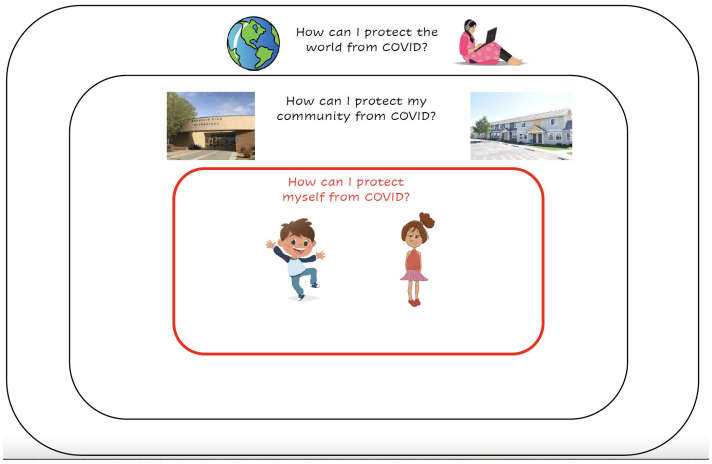
MMR: three cheers for vaccines!

Measles virus, and the similar Mumps and Rubella viruses, are pathogens that have slightly different symptoms than COVID. Like COVID, these are respiratory viruses that spread from water droplets coughed or sneezed by an infected person. The measles virus particles are able to stay suspended in the air for up to two hours after an infected person has left an area! This makes these viruses HIGHLY contagious. Because of this long air-time, uninfected people can unknowingly enter a space where an infected person once was (for example, a doctor's office waiting room) and inhale the pathogen. The good news is that there is a powerful vaccine,

the MMR vaccine, that is recommended especially for young children to prevent measles infection. Most people get this vaccine when we are babies! This extensive, long-term vaccination protocol has greatly reduced the occurrence of measles in the United States, almost eliminating it entirely!

Bless you!

Two other very common respiratory viruses are Influenza (“the flu”) and rhinoviruses (“the common cold”). There are several different versions, or "strains", of these viruses that infect people all throughout the year. They are spread in the same way that COVID is. Most people become sick with these viruses multiple times per year - usually during the fall and winter. Common symptoms include runny nose, sore throat, cough, body aches, sneezing, and fever. There is no vaccine for the common cold, and the flu changes so much every year that new vaccines are created constantly. Make sure you get the new flu vaccine every year! The best way to prevent becoming infected with these viruses is by using the protective behaviors we have learned about from COVID - these behaviors work for many different pathogens!



pathogen

patógeno/patógena

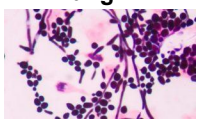
something that is too small to see that can invade your body and make you sick

types of pathogens

viruses

coronavirus

fungi

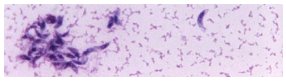


candida

bacteria

e. coli

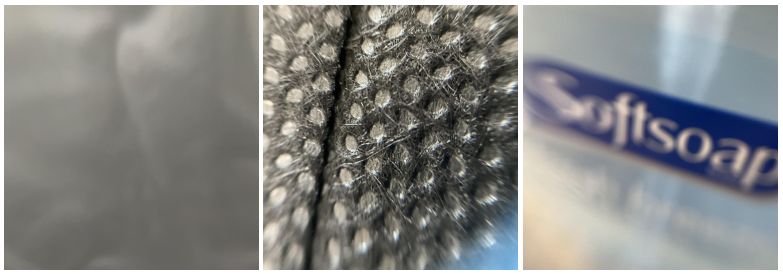
protozoa



toxoplasma

worms

tapeworm



how can we protect ourselves from pathogens?

tableau: a freeze photo from a skit

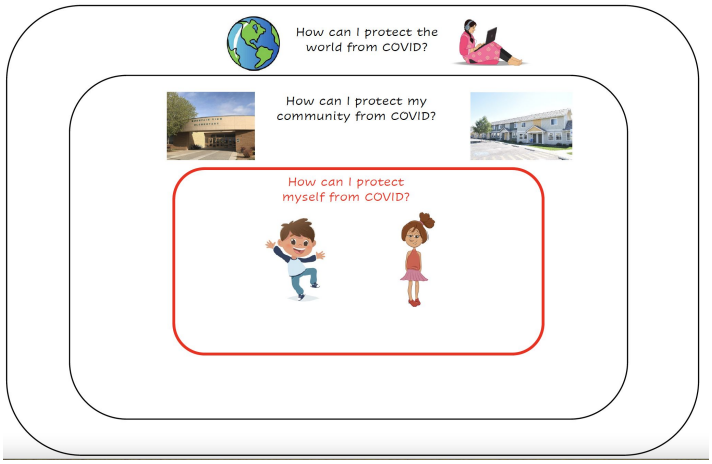
skit: a short play that tells a story

2-5 minutes!

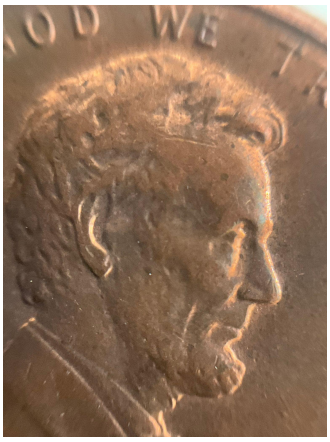
uses props!

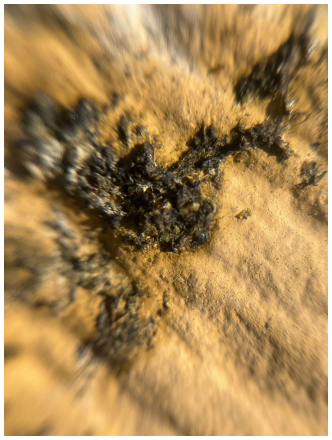
can be silly!

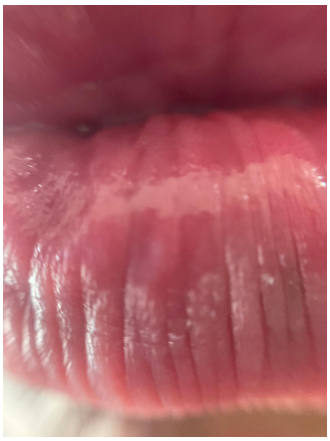
tells a story about protecting yourself from pathogens invading your body!

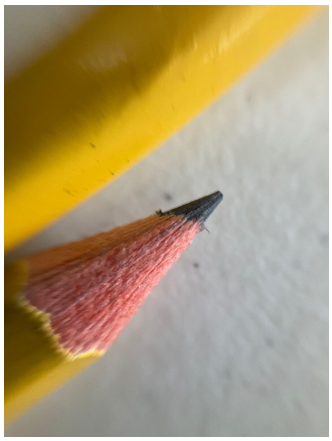

How can I protect the world from COVID?
How can I protect my community from COVID?
How can I protect myself from COVID?

close ups: make you sick

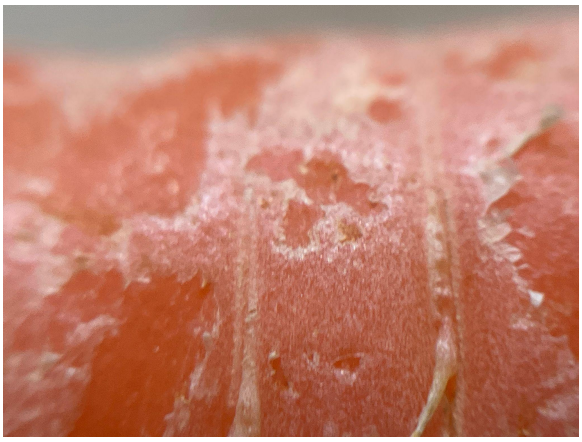


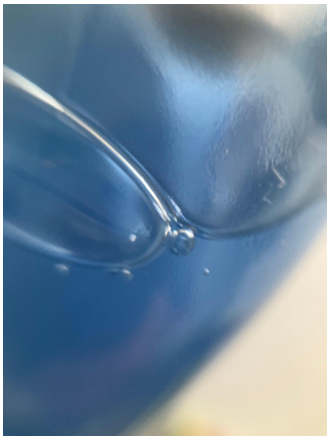


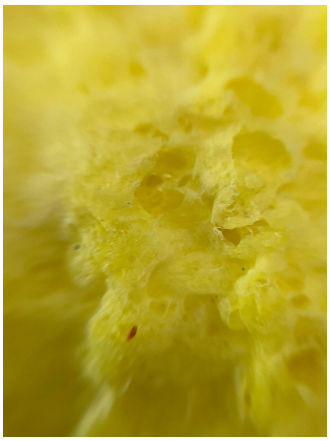


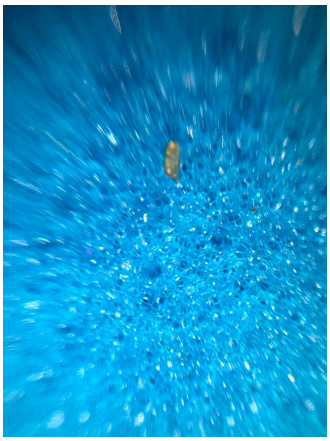


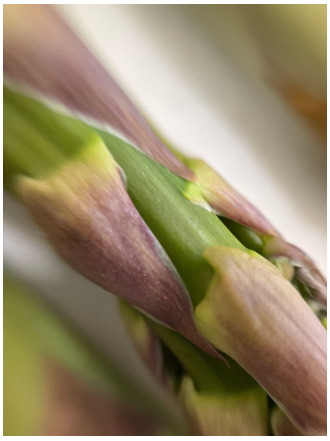
close ups: protect you from pathogens









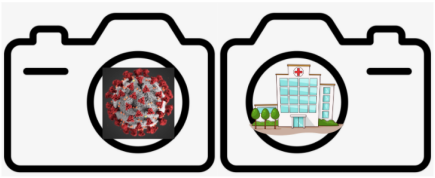


tableaus

One last step!

Please answer a few questions about how this segment went. This helps us learn from you about how to improve the activities.

Scan this QR code and fill out this quick survey.



Segment Three Facilitation Guide
Care and Community

Overview

In this segment, we expand the lens through which we view protection from COVID – from thinking about protection on an individual level to thinking about protection on a community level. Learners will be introduced to how pathogens spread. Learners will explore the question: how can we protect our community from COVID? Learners will engage with three common ways to protect their community from COVID: wearing masks, social distancing, and getting vaccinated. After learning about some ways to protect others in their community from COVID, learners will produce self-portraits depicting themselves as community protectors.

Big Ideas/Questions

- How does a pathogen spread between individuals?
- What protects a community from COVID (transmittable pathogenic disease)?
    - What can individuals do to protect their community from pathogens?
- Why should we protect our community from COVID?

Grade Level/Age

3rd - 5th grade (approx. ages 8 - 11)

Objectives and Assessment (Science and Art)

Objective	Assessment
Learners describe how a pathogen spreads through a community.	*Learners identify patterns in Community Pathogen Tag that describe how a pathogen moves through a community, including how quickly it can be transmitted to many people.*
Learners describe three common methods for reducing pathogen spread through communities.	*Learners interpret mini-activity results to conclude how each of the three methods helps stop the spread of COVID19.*
Learners interpret key ideas and details of self-portraits using visual thinking strategies.	*Learners identify specific attributes of photographs using language like "I see" or "I think" and "because" during discussion.*
Learners use understanding of composition, framing to take meaningful self-portraits.	*Elements of composition, framing and perspective are apparent in photographs.*

Learners make connections between protecting small systems (such as the human body) and larger systems (such as communities).	*In discussing how to protect a community system from COVID, learners move across individual systems and community systems, explaining cause and effect on different levels.*

National Core Arts Standards

Anchor Standard #1: Generate and conceptualize artistic ideas and work.
Anchor Standard #2: Organize and develop artistic ideas and work.
Anchor Standard #7: Perceive and analyze artistic work.
Anchor Standard #8: Interpret intent and meaning in artistic work.

Next Generation Science Standards

Disciplinary Core Ideas

- ESS3.B Natural Hazards: A variety of natural hazards result from natural processes. Humans cannot eliminate natural hazards but can take steps to reduce their impacts.
- LS2.D Social Interactions and Group Behavior: Being part of a group helps animals obtain food, protect themselves, and cope with changes.

Science and Engineering Practices

- Asking Questions and Defining Problems
- Developing and Using Models
- Planning and Carrying Out Investigations
- Constructing Explanations and Designing Solutions
- Obtaining, Evaluating, and Communicating Information

Crosscutting Concepts

- Cause and Effect: Cause and effect relationships are routinely identified.
- Systems and Systems Models: A system can be described in terms of its components and their interactions.
- Scale, Proportion, and Quantity: Natural objects exist from the very small to the immensely large.
- Patterns: learners identify similarities and differences in order to sort and classify natural objects and design products.
- Structure and Function: Different materials have different substructures and substructures have shapes and parts that serve functions.

Time

2 hours

Materials

- Projector and screen to display slide decks and photos
- Computer to display slide decks and photos
- Segment 3 slide deck
- Space for gathering and sharing photos taken by learners
    - Large screen for whole-group sharing?
    - Printed photos for small groups/individuals?
- Cameras
- Community Agreement poster about using/sharing cameras
- Community Agreement poster for discussing each other's photos
- Notecards
- Pencils
- Pencil sharpeners (optional)
- Dice (1 die for every six learners; e.g., 18 earners requires 3 dice, 32 learners requires 6 dice)
- Bubble machines with bubble liquid
- Spray bottles (1 per pair of youth) pre-filled with water and baking soda in a ratio of 3 teaspoons baking soda to 1 cup water
- Coloring-changing (goldenrod) paper (one per youth)
- Tape
- Masks (one per youth)
- Butcher paper with target (circle) drawn in center (3)
- 4 differently colored puffball packs (at least 5 puffballs per color per person)
- Measuring tape
- Bleach (at least 3 cups)
- Red food coloring
- Plastic cups (6)
- Water (at least 3 cups)
- Sketching paper
- Assorted self-portrait props (can use the same props as Segment two; we have found it helpful to have a prop box with a variety of items for learners to utilize). Fun props could include:
    - Dress up clothes (coats, gloves, hats, bodysuits, dresses, etc.)
    - Masks
    - Hand sanitizer
    - Sponges
    - Jewelry
    - Stickers
- Optional: Materials for makeshift backdrop for self-portraits (e.g., black sheet to hang as backdrop)
- Post-it notes
- Poster paper titled "Care and Community" for placing post-it notes at the end of the segment

Background Information for Facilitators

Art Background Information
Self-portraits are works an artist makes that represents their own likeness in some way. These can be photographs, sculptures, paintings, or any other type of medium that the artist wants to use. Often, the objects in the portrait give more details of the artist's life, like their likes, hobbies, and special interests. Colors and themes can also evoke a certain mood the artist is trying to portray about themselves. This helps the artist tell a story about themselves. When doing self-portrait photographs, the composition of the self-portrait can tell a story of the individual in the photo, too! Often, self-portraits are a snapshot of an artist and their story completely from their perspective.

We also again use **Visual Thinking Strategies** in this segment. These are inquiry-based teaching methods that improve a learner's ability to describe, analyze, and interpret imagery and information through observing and discussing visual art. It has been proven that using the following phrases get the best results from learners/observers. Learn more at www.vtshome.org.

- "Take a moment to look at this photograph"
- (Q1) What's going on in this picture?
- (Q2) What do you see that makes you say that?
- (Q3) What more can we find?
- (Q4) What could be going on beyond the frame of this photo?

Science Background Information
Pathogens can be passed from one individual to another in a community, causing a disease to spread rapidly. COVID spreads through water droplets from a sick person from when they sneeze, cough, or touch their nose or eyes. If someone else accidentally swallows those water droplets they can also become sick with COVID. There are actions individuals can take to protect their community from COVID. This includes wearing a mask, washing your hands, not touching your eyes/mouth/nose in public, social distancing, staying home if you feel sick, and getting vaccinated! Protecting yourself will help protect your community!! [See *Module 2 - Care and Self* for a more detailed list of different self-protective actions you can take]

Our communities are important - they are our families, our neighbors, our friends. The people in our communities can be very different from one another. We have differences in jobs, ages, resources, and health. Being part of a community is important for our happiness, but can increase the risk of human-to-human pathogen transmission. Sharing space with other people puts us at potential risk for unintentionally spreading pathogens to one another. Sometimes we do not know we are sick, and sometimes when we are sick we aren't able to stay home or get better. That is why if you are able to protect yourself, you will protect others in your community from getting sick too.

Preparation
- Make sure all cameras are charged and ready for use.
- Set up a computer and projector to display slide deck and photos.

- Decide how to project or share photos for discussion – physically or electronically?
- Decide how to gather and share learner's photos – Designated on-line application? Google folder? Airdrop? Printing physical copies?
    - Part A and B of this segment both have learners share and discuss their photographs with one another. How this is organized and facilitated is largely dependent on the facilitator's preferences and the learning environment. Learners' photos can be projected to a screen, printed and passed around, or posted around the room and presented as a gallery.
- Part A Preparation:
    - Prepare an open space for learners to play the games associated with direct and indirect pathogen transmission. The space should be large enough for your learners to walk freely but be close enough to make contact with one another.
    - Fill bubble machines with bubble liquid and make sure there are batteries.
    - Set up mini-activity stations with materials needed for each:
        - Mask mini-activity
        - Social distancing mini-activity
        - Vaccine demonstration
- Part B Preparation:
    - Set up an area for learners to take their self-portraits. This could include:
        - Backdrop for photos (a sheet hanging on the wall)
        - A stool
        - Assorted props for learners to choose from

Facilitation Guide

Part A (approx. 1 hour): *How are pathogens passed in a community? What actions can prevent pathogens from spreading in a community?*

- Big Picture Framing: community (5 minutes)
    - Using the "Big Picture" slide for the whole group, frame the part of the system this activity is focusing on: community.
    - Explain that today we are going to focus not only on how we can protect ourselves from COVID through taking actions that protect our bodies from infection, but also how we can protect others around us from COVID.
    - Ask learners what they think we mean by "community." Who makes up their community? Have learners share aloud or do a pair and share.
    - Ask learners why they think it is important to help protect their community from COVID.
    - Looking at the "Big Picture," ask learners to make predictions about how they think a pathogen could spread through a community. Ask them how they think they could help stop it from spreading.
    - Today we are going to explore how a pathogen spreads across a community from individual to individual and ways that we can stop that spread.
- Whole group introduction activity to how pathogens spread (20 minutes)

- Explain that we are going to explore two ways that pathogens can be spread – each through a game. The first way is through direct, or contact, transmission. Use the slide in Segment 3 slide deck to explain.
    - Contact transmission is when a pathogen is passed through skin-to-skin contact, such as high fives.
- Direct contact transmission – learners play a game to explore how pathogens can be spread directly.
    - Have each learner count off and tell them to remember their numbers.
    - Give each learner a notecard and a pencil.
    - Have learners spread out around the room and begin walking around the room with their notecard and their pencil.
    - When learners are close enough to another learner to give them a high five, they need to stop and write the other person's number on their card. Writing the other person's number on their card means they "came into contact" with that person.
    - Have learners do this long enough that they have approximately 3-5 numbers on their cards.
    - Once learners sit down, roll the dice (one die for 6 or fewer learners, two dice for 7-12 learners, 3 dice for 13-18 learners, and so on). The total number after the dice are rolled is the number that was "infected." For example, if there are 24 learners total, roll four dice. If the four dice, for example, total 17 then learner number 17 was "infected."
    - Tell learners that anyone who came into contact with that learner is also sick through direct contact transmission.
    - Ask learners to raise their hand if they came into contact with our infected community member.
- Debrief the game
    - Ask learners if they were surprised by how quickly the pathogen spread. What would have happened if two people, rather than one, were infected with the pathogen? What are some ways that you think could help stop the spread of the pathogen?
        - You could even roll the dice again and pretend that two people in our community were infected. How does that change the spread through the community?
    - Ask learners to imagine a pathogen that doesn't even require direct contact to be passed along. How could that pathogen be spread? *Through the air.*
    - *Have learners wash or sanitize their hands after this activity if they actually gave each other high fives.*
- The second way that pathogens can be transmitted is through droplet or air transmission. Use the slide in Segment 3 slide deck to explain.
    - Droplet transmission is when a pathogen is passed between humans through droplets that people sneeze, cough, drip or exhale.

    - Indirect, droplet, or air transmission – learners play another game to explore how pathogens can be spread indirectly.
        - Explain that some pathogens can be transmitted through direct contact *and* also through the air when someone breathes, sneezes, or coughs.
        - In this game, learners pretend that you, the facilitator, is sick from a pathogen. While you promise not to touch anybody, you can still pass your pathogen through the air.
        - Have learners wander around the room. While they are wandering, use the bubble gun to blow bubbles into the air. If a bubble lands on a learner, they become sick. This is similar to a droplet landing on someone and passing along the pathogen.
        - After about 30 seconds, sort learners by those who became sick (had a bubble land on them) and those who did not become sick (did not have a bubble land on them).
    - Debrief the game – Ask learners to compare how a pathogen spreads directly versus indirectly.
        - How could we help stop the spread of these kinds of pathogens?
        - Do you think COVID is a pathogen that spreads directly, indirectly, or both? Why?
        - Explain that the pathogen that causes COVID-19 can be passed both directly, through contact, and indirectly, through droplets, making it a pathogen that very easily spreads throughout a community.
- Introduce different ways that individuals can protect communities from pathogens spreading. For each approach, learners will do a **mini-activity**. (10 minutes per activity, 30 minutes total)
    - For these activities, facilitators should break the large group into three smaller groups. (See Tips for Group Participation for alternatives). Have each group rotate through all three mini-activities, spending approximately 10 minutes at each. There should be one facilitator at each mini-activity to introduce and support learners through the activity. *Reminder: the vaccine mini-activity is a demonstration that should be completed by a facilitator while learners observe.*
    - **Mini Activity: Wearing Masks –** This activity is best done in groups of 3 with each learner playing a different role:
        - Learner 1: Uninfected - holds the color-changing paper up
        - Learner 2: Infected - uses the spray bottle pre-filled with water and baking soda
        - Learner 3: Protector - holds the mask

      Using the spray bottles pre-filled with water and baking soda, have learners spray onto two separate sheets of color-changing (goldenrod) paper from approx. 12 inches away. One paper should be sprayed without a mask and one paper sprayed through a mask. One student should hold the mask to the spray bottle while the other holds the bottle. It is helpful to keep the mask taught and the nozzle of the spray bottle pressed firmly against the mask - it should be difficult to

get water to spray through the mask, which demonstrates its protective effect. As a group, discuss the results of the spray patterns with and without the mask.

- **Mini Activity: Social distancing –** Have learners stand in a circle around a target/circle drawn onto a large piece of butcher paper. Starting as close as possible, learners should try to toss in their ColorA puffballs. Then, move to 3 feet away from the center, and toss in the ColorB puffballs. Move to 6 feet away from the center, and toss in the ColorC puffballs. Move to 12 feet away from the center, and toss in the ColorD puffballs. Make sure that all of the puffballs are left alone once they are tossed. It is ok if they don't go in the box! Have learners pick up their puffballs after discussion. Prompt learners to think about the relationship between distance and the amount of puffballs that made it to the center target.
    - When we were close, was it easy or hard to get the puffball into the box? What about when we were far away? What do the colors of puffballs we see on the floor tell us about where they came from?
    - How is this related to COVID transmission? If we compare the puffballs to a virus, how does distance change the way they travel? Have we talked about any ways to protect ourselves against viruses that relate to this activity?
- **Vaccines:** ***This is a demonstration rather than a hands-on activity.*** Begin with two cups, one filled with bleach and one filled with water. Explain that one cup (water) represents someone who does not have a vaccination against COVID. The other cup (bleach) represents someone who does have a vaccination against COVID.
    - Use food coloring to represent the pathogen. Explain that if you have a vaccine or not, you can still come into contact with the pathogen. But! What happens to your body when you come into contact with COVID is different depending on whether or not you are vaccinated.
    - Have learners make predictions about what they think will happen when food coloring (COVID pathogen) is dropped into water and when it is dropped into bleach.
    - Drop a few drops of food coloring into water. Have learners observe what happens. Where does the pathogen go? Does it move throughout? Based on the color of the water now, do you think this person is sick or not?
    - Drop a few drops of food coloring into the bleach. Have learners observe what happens. Does the pathogen spread? How does the color (infection) compare to the water?
    - Explain that this is a model representing how a vaccination works. Even though someone can come into contact with the COVID pathogen, people with the vaccine (bleach) are less likely to get seriously sick and also less likely to pass it along to others. ***Emphasize that this is a model (an example illustration). Bleach should never be consumed to protect from pathogens.***
- Review and discuss the three forms of protection and relate them back to the community spread of pathogens (10 minutes).

        - Ask learners to look back at their pictures from the mask activity where they sprayed a piece of color-changing paper both with and without a mask to block the spray. What do they notice in their pictures? How can masks reduce the spread of a pathogen through a community?
        - Ask learners to look back at their pictures from the social distancing activity where they threw puffballs at the target from different distances. How can social distancing protect communities from COVID? How does it affect a pathogen moving through a community?
        - Ask learners to recall the food coloring and bleach demonstration. How did the pathogen spread when it was placed into the vaccinated cup (bleach) compared to the non-vaccinated cup (water)? How does getting vaccinated protect communities from COVID? How does getting a vaccine influence the spread of a pathogen through a community?

Part B (approx. 1 hour): *Self-portraits can tell the story of an individual. We are going to create self-portraits of each of us as "community protectors."*

- Explain that today we are going to tell stories of how to protect communities from the spread of COVID. We are going to do this through self-portraits – a style of photography. Each learner will have an opportunity to take a self-portrait of themselves dressing up and acting out what it looks like to be a community COVID protector.
    - Begin by showing examples of self-portraits using the slide deck (10 minutes). With each photo, ask visual thinking strategic questions:
        - (Q1) What's going on in this picture?
        - (Q2) What do you see that makes you say that?
        - (Q3) What more can we find?
        - (Q4) What could be going on beyond the frame of this photo?
    - Explain that self-portraits can be used to tell a story about a person and the time and place they live.
    - Explain that learners can pull from the prop box and dress up as a community COVID protector. They can use masks, physical distancing, and other objects (that could, for example, represent vaccines, etc.) to show themselves as a community protector.
- Have learners plan and take their own self-portraits: (25 minutes)
    - Have learners sketch some ideas for their self-portrait before selecting props and taking photos.
    - Give learners some time to select objects that they would like to use in their self-portrait, to plan out how they want to show themselves as a community protector.
    - Once learners have planned out their self-portrait, have them come to the self-portrait station to take their photo.
    - At least one facilitator will need to be at the self-portrait station to take the self-portraits.
- After learners have taken their self-portraits, have them share and discuss each other's photos (15 minutes). A gallery walk may be a useful way to conduct this discussion. If time allows, hang each learners' self-portrait on the wall displaying them around the

room. Give learners different color post-it notes that correspond to different VTS questions and have them walk around the room looking at other learners' self-portraits. Have learners respond to each other's self-portraits by writing comments on post-it notes. See slide deck for example questions.
    - Encourage learners to use the visual thinking strategy questions:
        - (Q1) What's going on in this picture?
        - (Q2) What do you see that makes you say that?
        - (Q3) What more can we find?
        - (Q4) What could be going on beyond the frame of this photo?
- Big Picture Segment follow-up (10 minutes)
    - Ask learners to reflect on three ways they think they can help protect their community from COVID. Have learners write these individually on post-it notes and display them on the "Care and Community" group poster. Discuss commonalities across learners responses and commonalities/differences between the protecting self (Segment 2) and protecting community (this segment) posters.

Tips for Group Participation

- In Part A we have suggested breaking into three smaller groups when doing the mini-activities (Wearing Masks, Social Distancing, and Vaccines). Depending on the number of facilitators and students you may choose to organize this differently. For example, you could do Vaccines as a whole-class demonstration and then split the students into two groups for Wearing Masks and Social Distancing. This is a good option if you have only two facilitators. If you have a relatively smaller number of students and one facilitator you could simply do the activities as a whole group one at a time.
- Photo sharing and discussion can be facilitated in many different ways depending on your learners and learning environment. Discussions can occur as a whole group with one photo projected for all to see, in small groups, or as a gallery walk with learners walking around the room where some/all of the photos are on display.
    - For small groups and gallery walks, consider posting the VTS questions in written form in the classroom to remind learners of the discussion prompts.
    - For small groups, you could ask small groups to work together to create a poster (using words and/or drawings) that shares some responses to the VTS questions.
    - Gallery walks can be especially helpful if you have a large number of learners and/or your learners need to "get some wiggles out." You can make a gallery walk "interactive" by giving learners small post-it notes and pens/pencils where they can write and post by each displayed photo short responses to one or more of the VTS strategies.
    - If you are working with a large group of learners, you may need to select a subset of learners to share their photos. If this is the case, pay attention to making sure that, over the course of the curriculum, all learners eventually have an opportunity to share.

Extension Activities

The following extension activity can be used as a model for learners to experience, through an embodied game, how pathogens can spread through a community. Part A introduces learners to pathogen spread without protection. Part B adapts the game to include elements of protection (i.e., wearing masks) in the game to model how pathogen spread is impacted by protective measures.

- **Part A – Community Pathogen Tag:** Learners are given a necklace with a card hanging from it. The card has two sides, a green side and a red side. The green side means "uninfected" and the red side means "infected."
    - The game begins with just 1-2 learners that are "infected" with a pathogen and the rest are "uninfected."
    - Infected (red tag) players are "it" and are trying to tag uninfected players. If tagged by an infected player, the pathogen is passed along and the uninfected player must turn their sign to the red (infected) side. Once they are red, they try to tag other uninfected (green) players. Run the game for a couple of minutes.
    - After the first round of the game, discuss what happened as a group. Did the pathogen spread quickly or slowly? Ask learners what they think could have slowed the spread of the pathogen?
    - Mention that it is recommended that people who are infected (those with red tags) rest and stay away from others so as not to infect them. But with COVID, some people who are infected do not even know they are infected and can still pass on the pathogen. They can move from green to red and not even know it.

- **Part B – Revisit Tag Game with Protection**. Revisit the tag game again, but this time, include some of the elements of protection that learners explored in the mini-activities. Depending on time, facilitators can choose to implement any of the "protective measures" into the game below.
    - **Masks as protection**: As before, start with 1-2 learners as "infected" with the pathogen. Of the remaining "uninfected" learners, give half of them a "mask" or "shield." Explain that the people with the shield can only be tagged (infected) if they let their shield down. If a learner is tagged by someone "infected" then they must turn their card to red and begin tagging. Run the game for a couple of minutes.
        - Debrief what happened with learners. Who became infected more? Those who were "wearing masks" or those who weren't?
        - Ask learners what they think would happen if the initial "infected" learners themselves were wearing a mask? Would that have changed the outcome?
    - **Social distancing as protection**. Start with 1-2 learners "infected." This time, instead of shields to represent masks, learners will use hula hoops to represent social distancing. Learners can imagine the hula hoop is like a bubble surrounding them and protecting them. If someone who is "infected" bumps into the hula hoop

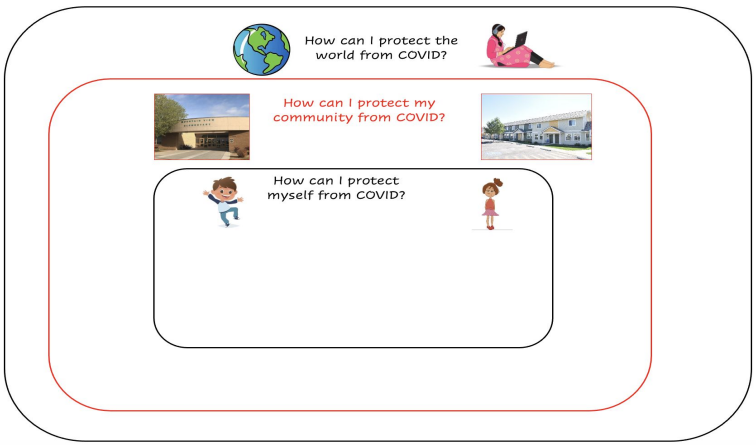
while trying to tag them, then they are not able to infect them. If they are able to tag them without making contact with the hula hoop, then they infect that person. Start with 1-2 infected and half of the remaining learners with hula hoops, and the remaining half without hula hoops. Run a round of game play for a couple of minutes.
        - Discuss what happened during game play: Who was infected more, people with a protective space bubble? Or people without it? Why do you think that is?
        - **Alternative social distancing tag**: Have learners spread out but stay within 3 feet from each other, standing in place. One learner (or facilitator) is the "pathogen". In 30 seconds, the “pathogen” goes and tags as many people as they can. If you get tagged, sit down. Repeat the game but have students spread out more (to resemble social distancing). Can repeat with different numbers of pathogens or change spatial arrangement of the people. Have a discussion of how being far apart physically affected the speed of the pathogen/the amount of people infected.
    - **Vaccines as protection.** In this adaptation, rather than half the learners with masks or social distance bubbles, half the learners will have blue stickers on their shirts. This means that they have “been vaccinated.” learners with blue dots, even if tagged, do not become “infected,” they keep their card on green for “uninfected” and do not go on to infect others. Beginning with 1-2 infected learners, have them play the game as usual. Run a round of the game for a couple of minutes.
        - Discuss the game: How did being vaccinated help protect the community in the game? Did a lot of people become infected or only a few people?
    - **Discuss the game as a whole.**
        - How do you think masks help protect the community? Think about our spray art and the shields in the game.
        - How do you think social distancing helps protect the community? Think about our spray art and the game with the hula hoops.
        - How do you think vaccines help protect the community? Think about our activity and the game where some people were unable to be infected.
        - What would happen if we had a game where shields, hula hoops, and unaffected people were all involved? How do you think the pathogen would spread through that community?
        - Which of these things are easy to do? Which are harder?

Some activities included in this segment were adapted from the following:
https://www.nationalgeographic.org/lesson/theres-outbreak/print/

Extended Science Background
Protect your friends from chickenpox!

The Varicella- zoster virus (VZV) is a respiratory virus that causes Chickenpox and Shingles. Chickenpox infection causes common respiratory symptoms, but is more famously associated with an itchy, blister-like rash. For people who had Chickenpox as children, the virus remains inside their body and can become active when they are much older, causing Shingles. VZV has a high infection rate - up to 90% of people close to an infected person will also become infected if they are unvaccinated.

In recent years, some parents have been using “Pox Parties” as a substitute for vaccination - intentionally exposing their children to a chickenpox-infected child. However, this infection puts the children at risk for future development of Shingles. Also, this means that VZV remains active in the population, potentially spreading to vulnerable people who do not have the choice to get vaccinated. While the people attending Pox Parties might be acting out of care for their child, their actions can put others in their community at risk. Understanding how viruses spread and are prevented can help us feel confident in making safe medical decisions for ourselves and help protect those around us!

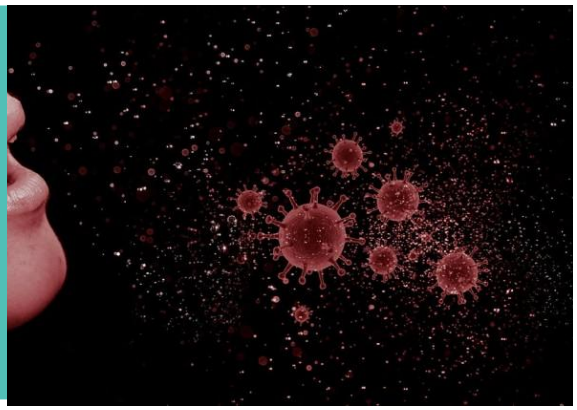


what is **community**?

who is part of your **community**?

contact transmission: a **pathogen** is passed between humans from **skin-to-skin** contact, such as high fives!

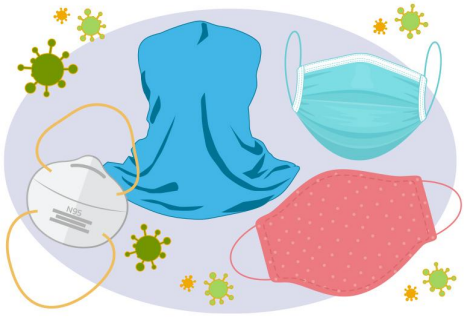
- Write your number on the front of notecard
- Spread out around room
- When I say "Go!" start walking around the room
- When close enough to high five someone, write their # down on the back of your notecard
- Keep going until I say "Stop!"

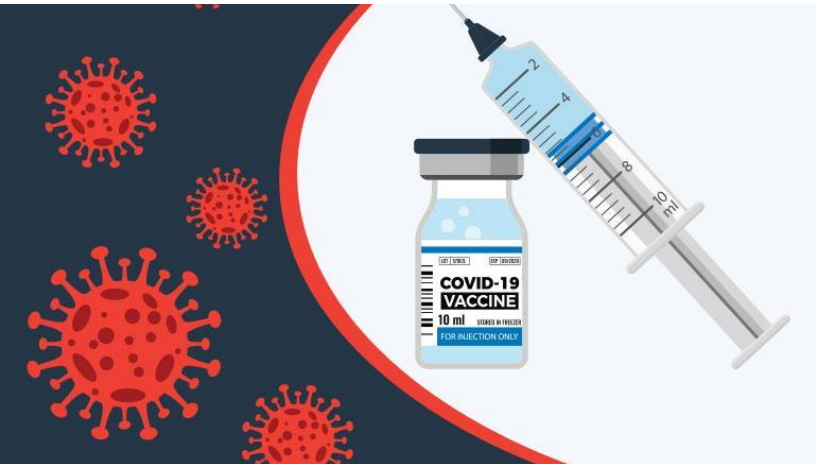


droplet transmission: a **pathogen** is passed between humans through **droplets** that people sneeze, cough, drip, or exhale

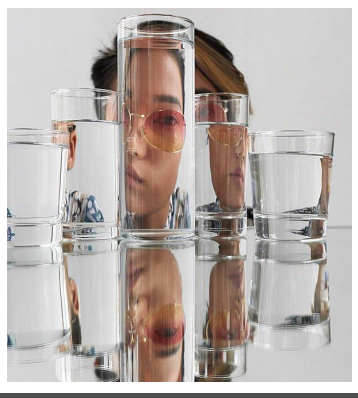
- Pretend that your teacher is sick.
- I promise not to touch anybody, but I am sneezing A LOT!
- I am sneezing BUBBLES!
- Spread out around room.
- If a bubble lands on you, you become "sick."

wearing masks





self-portraits



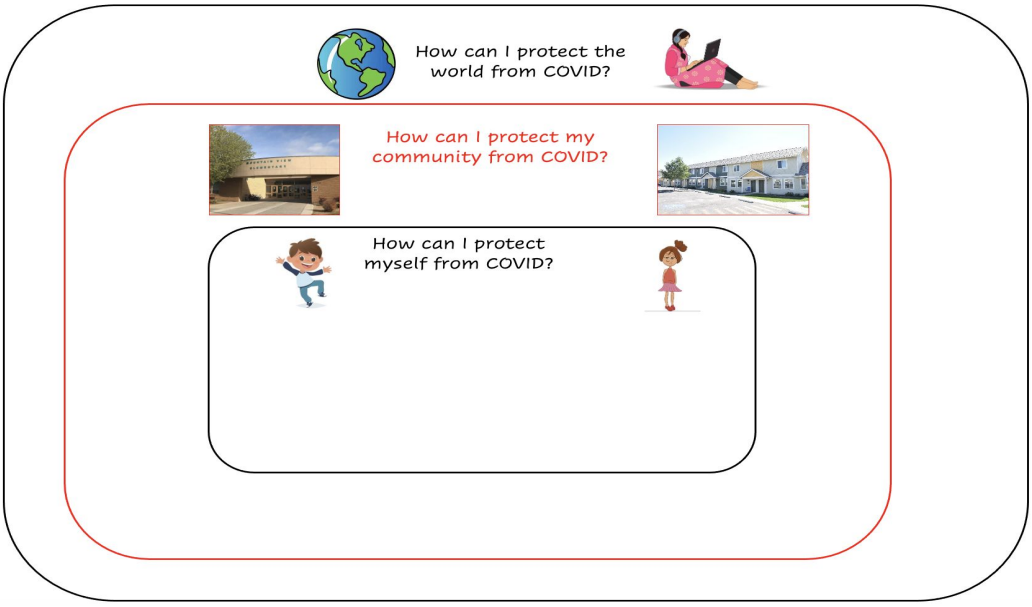
self-portraits

design and take a self-portrait that shows you as a **community protector**

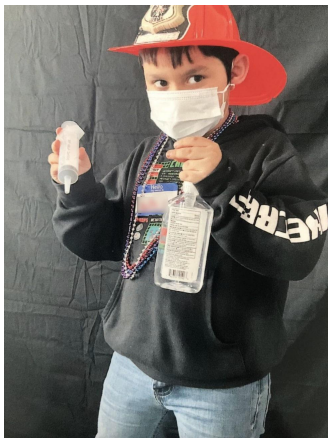
1. sketch out your self-portrait with pencil on paper
2. show your finished sketch to the facilitator
3. select props from the prop table
4. pose for and take your self-portrait
5. return props to prop table

gallery walk

- what do you notice about this photo?
- how is this person protecting their community?
- write one word describing how this photo makes you feel.



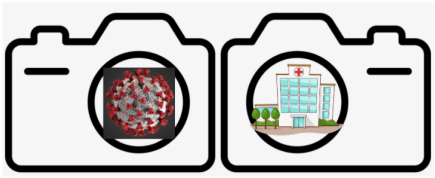
self-portraits



One last step!

Please answer a few questions about how this segment went. This helps us learn from you about how to improve the activities.

Scan this QR code and fill out this quick survey.



Segment Four Facilitation Guide
Care and the World

Overview

In this segment, learners will explore even bigger questions than in previous segments. Here they ask: How can I help protect society or the world from COVID? How are pathogens, the human body, communities, and different groups of people across the world connected in helping protect against disease? How can access to virus protection for all communities be increased? To engage in and explore these big questions, learners will explore pre-existing photographic narratives of community members' COVID stories and create their own narrative using sketches, videos, and photographs. Beginning with sketches, learners craft imagined or real stories related to protecting the world from disease. Using their sketches as a guide, next they have the option to record a video of them telling their stories. Following, they take at least five photographs that assist in telling the story they have crafted. This segment focuses on large systemic connections by exploring virus protection through stories and narratives.

Note: This segment includes the option for learners to record their stories as videos that accompany their sketches and photos. Videos are optional if camera equipment does not capture video.

Big Ideas and Questions

- How do different communities of people and their careers help protect against viruses and disease?
- How are viruses, the human body, and different communities connected in helping protect against viruses and disease?
- How can access to protection for all communities of people be increased?

Grade Level/Age

3rd - 5th grade (approx. ages 8 - 11)

Objectives and Assessment (Science and Art)

Objective	Assessment
Learners make observations and claims, and provide and identify evidence supporting claims.	*Learners will produce a photo narrative that communicates visually and orally someone's COVID story, and summarizes ways to increase or continue health access.*
Learners demonstrate understanding of basic	*Learners produce a final photo narrative that*

photographic principles of rule of thirds and vantage point.	*includes images with these elements.*
Learners define a simple design problem reflecting a need or a want and generate possible solutions.	*Learners produce a photo narrative that communicates a problem with societal protection from COVID and identifies possible solutions.*
Learners present their work and interpret others' artistic work, and convey meaning and interpret the intent of their artistic work.	*Learners produce a final photo narrative that communicates visually and orally their real or imagined COVID story that highlights their personal knowledge and considerations of societal protection from COVID.*

National Core Arts Standards

Anchor Standard #1: Generate and conceptualize artistic ideas and work.
Anchor Standard #2: Organize and develop artistic ideas and work.
Anchor Standard #7: Perceive and analyze artistic work.
Anchor Standard #8: Interpret intent and meaning in artistic work.

Next Generation Science Standards

Disciplinary Core Ideas

- ESS3.B Natural Hazards: A variety of natural hazards result from natural processes. Humans cannot eliminate natural hazards but can take steps to reduce their impacts.
- LS2.D Social Interactions and Group Behavior: Being part of a group helps animals obtain food, protect themselves, and cope with changes.

Science and Engineering Practices

- Asking Questions and Defining Problems
- Developing and Using Models
- Planning and Carrying Out Investigations
- Constructing Explanations and Designing Solutions
- Obtaining, Evaluating, and Communicating Information

Crosscutting Concepts

- Cause and Effect: Cause and effect relationships are routinely identified.
- Systems and Systems Models: A system can be described in terms of its components and their interactions.
- Scale, Proportion, and Quantity: Natural objects exist from the very small to the immensely large.

- Patterns: learners identify similarities and differences in order to sort and classify natural objects and design products.

Time
2 hours

Materials
- Projector, computer, and screen to display slide decks and photos (alternatively print these out)
- Segment 4 slide deck
- Space for gathering and sharing photos, sketches, and videos created by learners. Options include:
    - Large screen and projector for whole-group sharing
      and/or
    - Printed photos or small screens (e.g., tablets or phones) for small groups/individuals
- Cameras
- Community Agreement poster about using/sharing cameras
- Community Agreement poster for discussing each other's photos
- Drawing materials for learners to sketch out their stories (e.g. colored pencils, markers, large, blank paper or poster board, storyboards, etc.)

Background Information for Facilitators

Art Background Information
COVID has changed many peoples' lives, including how we live in our homes, interact with one another, and how we work and learn. Many people and artists are documenting these changes by taking photos. These photos also help other people visually see stories of COVID experiences, which may be similar or different to their own stories. When we compare and contrast these stories, they can help us understand the differences in health access across communities, too. We can answer questions, such as:

- How do different communities of people and their careers help protect against viruses?
- How can protection for all communities of people be increased?
- How are viruses, the human body, and different communities connected in helping protect against viruses?

By now, learners will better understand how COVID is spread and ways to prevent infection on both individual and community scales. They have used theater-arts and close-up photography to consider ways to protect their precious health and bodies from pathogens. They have also explored how protective measures, such as social distancing, vaccines, and wearing masks, help protect their community from COVID. Refer back to the Care and Self segment, and the Care and Community segment to revisit these activities. Learners by now are also aware that photography is an art, and that photographers often use specific techniques to help share their visual stories. So far we have covered two areas of photographic literacy: vantage point (e.g. scaling a photo and subject from different perspectives) and composition, or how the elements

of a photograph are arranged (e.g. framing the subject and adhering to the rule of thirds). Refer back to the Introduction to Photography segment to revisit these ideas.

More can be found about how learners might interpret and make meaning from their and others' works by checking out these visual literacy resources.

Science Background Information
The first case of COVID-19 was detected in December of 2019. It quickly spread throughout Asia, until it found its way to other continents, including North America. This pathogen was able to spread so quickly all over the world due to our ability to travel across far distances (using trains, airplanes, or cars) and be in contact with lots of new people in a short amount of time. People traveling around the world can catch and spread pathogens to uninfected populations, whether they know they are sick or not.

Globally, COVID does not affect people the same way. There is variation in the amount of cases, severeness of symptoms, and even death rates. This is because of a number of reasons - differences in how people interact with each other, differences in access to protective supplies, and differences in general health. Around one third of people with the virus do not show any symptoms of the disease. This is called being asymptomatic. Asymptomatic people can still spread the virus to other people! These differences in disease severity, understanding about the pathogen and disease, and access to healthcare and protective supplies result in a lot of confusion about the disease. This is why it is important that scientists take into consideration the people and resources that different communities have in order to understand how a pathogen might spread there!

When the COVID pandemic first started, there was understandable fear. It is scary to hear that a new disease is spreading fast with painful symptoms. At the time, many people did not know very much about the disease. Even now, there are still many questions about the disease and scientists are constantly learning new things about it. The global panic that occurred is a common trend when new pathogens and viruses appear in humans. Due to our ability to interact with people and move all over the world, we are a connected society that makes not only these disease risks emerge and spread globally, but also the fear that they cause. Learning more about your community and your risks around COVID and other diseases can help alleviate that fear!

Preparation

- Make sure all cameras are charged and ready for use.
- Set up a computer and projector to display slide deck and photos. (Or prepare printouts).
- Decide how to project or share photos for discussion – physically or electronically?
- Decide how to gather and share learner's photos – Designated on-line application? Google folder? Airdrop? Printing physical copies?
    - Part B of this segment has learners share and discuss their photo narratives with one another. How this is organized and facilitated is largely dependent on the facilitator's preferences and the learning environment. Learners' photo and

videos can be projected to a screen or posted around the room and presented as a gallery.

- It may be helpful to write out some questions for learners to think about while they are watching the pre-made photo narratives, such as: What was the main point or issue in the story? What did you notice?
- Similarly, when learners are making their own photo narratives, we have provided a "recipe" or guidelines to follow to create their photo narrative. It might be helpful to write these out or post them prior to the session beginning.
    - The "Recipe":
        - Make a COVID story, real or imaginary, that connects in some way to one of the stories you heard/read from the community story book.
        - Make a sketch of your story. This could be in a comic form or just one drawing.
        - Record yourself telling your COVID story (optional).
        - Use at least 5 photos you have already taken in our time together, or take 5 new photos that help tell your story.
        - Put these photos together to create a story.
        - Label the photo with captions, or add text to help us understand and know your story better!
        - Be creative (your story doesn't need to look like the storybook) and be prepared to show us your story at the end of our time together!
- Will learners be using pre-existing photos they have taken for their own photo narratives? Or will they be going out on mini-excursions during this activity to take more? This is facilitator dependent, but if learners are going out, think of areas where they can do this, and with whom. This also will likely take more time.

Facilitation Guide

Part A (approx. 1 hour)

- Introduction (15 minutes)
    - Until this point we have been exploring how to protect both ourselves and our communities from pathogens, such as COVID. Today we are going to look at different experiences people have protecting themselves and others from pathogens.
    - Let's take a look at our "Big Picture" activity again using the slide deck. Tell learners that we are going to ask ourselves how we can protect the world from diseases like COVID. Last time we were asked how we could protect our community, now we are going to expand this even more. Review some of the ways learners depicted community protection in their self portraits. This time we are moving farther out from the center. What do you think should go there? How can we protect society and the world from COVID? *(Possible responses include access to healthcare resources like medicine, hospitals, and doctors, but also see where the learners take it and what's coming up for them. They might think there are other important connections!)* Tell us why you are adding that?

- Introduce the concept of a photo narrative (10 minutes)
    - Using the slide deck, explain that we are going to be creating photo narratives. Break down the words photo and narrative for learners.
        - Photos – pictures that we take
        - Narrative – a story
        - Photo narratives, then, will use pictures that we take to tell a story.
    - Have a conversation with learners about stories using the questions in the slide deck. Ultimately, they will use their own experience in the pandemic or their imagination to tell a story about protecting society or the world from COVID. Have them brainstorm about what makes a good story using the following questions:
        - What is your favorite story? Favorite movie? Favorite book?
        - Why do you like that story?
        - What makes a story a story? What do all stories have? What are the different possible parts of a story?
        - Are stories always real?
- Storybook Explorations (30 minutes)
    - We're now going to take a look at two stories of people during and since the COVID-19 pandemic. Use the slide deck to show the videos and photos of each photo narrative.
    - We are going to watch these stories together. Each story is available in the slide deck in English and Spanish. Select the option that is best for your learner group or watch both!
        - First, let's all just watch and look and listen. Really explore the story. Pay attention to wherever your attention takes you.
        - Now, let's look back at the story and try to answer some questions together.
            - *What's going on in this story? What do you see that makes you say that?*
            - *Was there a problem in this story? If so, how was it solved?*
            - *How did this story make you feel?*
            - *What more do you want to know or find?*
            - *How do the photos selected relate to the stories told by Jessica and Johana? (Ask learners to connect what they are seeing in the images to the stories told.)*
    - We noticed some really cool things. Thank you for sharing! I'm so excited because now we are going to use these cool stories from the storybook as examples to help us make our OWN photo narratives and stories!

Part B (approx. 1 hour)

- Create Your COVID Photo Narrative (Individual or in Photo Narrative Groups) (40 minutes)
    - We are going to create our own/joint photo narratives now. *(See the preparation section above for tips on how learners could make joint narratives.)*

    - We all have examples from our community storybook, and we can also use whatever strategies we think would work best to tell our story. There are so many different ways to tell a story. But, we may want to follow this recipe *(think about posting/writing out this recipe prior to the session)*:
        - Make a COVID story, real or imaginary, that connects in some way to one of the stories you heard/read from the community story book.
        - Make a sketch of your story. This could be in a comic form or just one drawing.
        - Record yourself telling your COVID story (optional).
        - Use at least 5 photos you have already taken in our time together, or take 5 new photos that help tell your story.
        - Put these photos together to create a story.
        - Label the photo with captions, or add text to help us understand and know your story better!
        - Be creative (your story doesn't need to look like the storybook) and be prepared to show us your story at the end of our time together!
    - Let's start storytelling!
        - While learners work on their narratives facilitators should circulate and ask questions:
            - What story are you trying to tell? What do you want viewers to know? What feels important for you to say about COVID-19 and what artistic choices can you make to help you communicate your story?
            - Why are you using the photos you are using?
            - What are things you want to highlight from previous units we have done or previous experiences/stories?
        - There are three main components to photo narratives: a sketch, a video (optional), and photos that help tell the story. Some learners may focus more on one component more than others. For example, some learners may want to focus most of their time on a comic or drawing that depicts their story and may opt not to record it. Others may make a sketch quickly and then dedicate most of their time to taking pictures. We encourage flexibility however learners want to tell their story and spend their time. The main goal is that they practice crafting a story, imagined or real, about protection from COVID and that they assign visual cues (through illustration or photography) to help tell their story.
- Sharing Our Photo Narratives (Whole Group - see alternative sharing formats in Tips for Group Participation below) (15 minutes)
    - If you'd like, we'd all love to see your photo narrative. You can show us your sketch, photos, and video and tell us what you were trying to do as an artist. *(It may be helpful to time learners during this, and make it a fun game or trick to be able to say what you were trying to do as an artist in a quick sound bite.)*

    - Learners present narratives. After each one, there should be a small celebration, like hand claps or snaps to support the artist. One audience member can say what they noticed or how it made them feel, too.
    - Thank you all. You are artists and storytellers. What are things you noticed from our stories? How did they make you feel?
- Conclusion Wrap-Up and Final Game (Whole Group) (5 minutes)
    - Let's take a final look at our "Big Picture" framing. What did we learn? What would we change?
    - What are some different ways characters in our stories helped protect the world from COVID?

Tips for Group Participation

- Facilitator might want to demonstrate activities by modeling the process. For example, in Part B, step 2: starting by journaling, drawing, cartooning, or going through your photos to see what story you want to tell may be necessary to show youth how to brainstorm a real or imagined COVID story.
- If learners are sharing cameras throughout the lesson, use pre-existing groups, or build groups around learners that would best create a photo narrative together. Joint narratives may prove to be a management challenge, but having learners take turns in photo submission can be helpful (e.g. one learner goes first and the other learner then chooses a photo based on the first photo to help create a story. They then keep taking turns until they feel their narrative is complete.)
- Photo narrative sharing and discussion can be facilitated in many different ways depending on your learners and learning environment. Discussions can occur as a whole group with one photo narrative projected for all to see, in small groups, or as a gallery walk with learners walking around the room where some/all of the photos are on display.
    - For small groups and gallery walks, consider posting the VTS questions in written form in the classroom to remind learners of the discussion prompts.
    - For small groups, you could ask small groups to work together to create a poster (using words and/or drawings) that shares some responses to the VTS questions.
    - Gallery walks can be especially helpful if you have a large number of learners and/or your learners need to "get some wiggles out." You can make a gallery walk "interactive" by giving learners small post-it notes and pens/pencils where they can write and post by each displayed photo short responses to one or more of the VTS strategies.
    - If you are working with a large group of learners, you may need to select a subset of learners to share their photos. If this is the case, pay attention to making sure that, over the course of the curriculum, all learners eventually have an opportunity to share.

Extension Activities

- Here are some extension questions for learners who finish early:
    - What is the experience and, or problem in your story?

    - What things did you include in your photographs to show this experience or problem? Are there certain ways you framed the photographs? Are there certain subjects you focused on? Why?
    - What do you think a solution might be?
    - Who would be a part of this solution?
    - How do you think you could share this story to other people? What would you do?
    - What advice would you give to others in creating a photo narrative?
- Learners can interview members of their own community to get a unique COVID story about medicine or medical facilities, career or home changes, and/or justice and access during COVID-19. This might be someone they know, or even someone they don't.

Extended Science Background

Coronaviruses: history repeats itself

COVID-19 is a disease caused by a virus called a coronavirus. Coronaviruses are all respiratory viruses, infect many types of animals, and have been the cause of several modern human pandemics in the past couple of decades. A pandemic is a disease that can spread to multiple countries, or world-wide. In 2003, Severe Acute Respiratory Syndrome (SARS) coronavirus was first discovered in Asia and began to spread to several other continents. Its spread was contained in 2003 and there have not been any recorded SARS cases since 2004. In 2012, Middle East Respiratory Syndrome (MERS) coronavirus was diagnosed in Saudi Arabia and spread to several countries, with a case fatality rate of 34%. Today, cases of MERS still occur globally, but are rare. In 2019, Coronavirus disease 2019 (COVID-19) was detected and quickly spread worldwide, infecting more people than any of the previous coronavirus outbreaks. All of these coronavirus pandemics have been able to spread due to our global society - people traveling around the world can catch and spread pathogens to uninfected populations.

Public Panic: the Swine Flu

In 2009, a new strain of Influenza (the flu virus), similar to one that is common in swine (pigs), was detected in a human. This virus quickly spread globally, becoming a pandemic known as H1N1, the "Swine Flu", or the "2009 pandemic". Due to this being a "novel", or new, virus, it was predicted and presented by news organizations to spread rapidly and have a higher mortality rate than other, already established flus. This caused global concern, but resolved quickly when scientists found the virus to be very similar to the flu viruses that regularly circulate in humans and declared the pandemic over in 2010. Now, the H1N1 virus is one of the regular seasonal flu viruses that occur in humans. It is likely that if you have had the flu recently, it was H1N1! The global panic that occurred in 2009 is a common trend when new pathogens and viruses appear in humans - think back to the panic that arose when COVID-19 first emerged. Due to our ability to interact with people and move all over the world, we are a connected society that makes not only these disease risks emerge and spread globally, but also the fear that they cause.

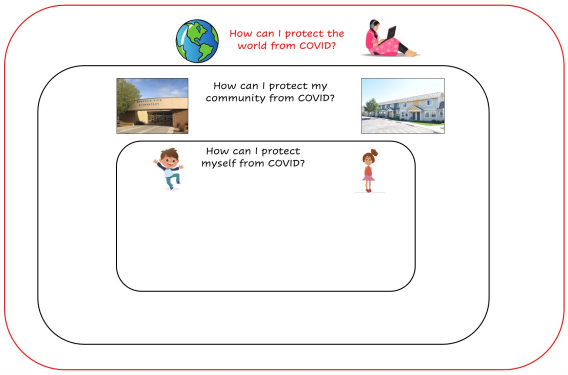


photo narrative

photo: pictures that we take

narrative: a story

we'll be telling a story that uses pictures that we take!

1. what is your favorite story?
   - favorite movie?
   - favorite book?
2. why do you like that story?
3. what makes a story a story?
   - what do all stories have?
   - what are the parts of a story?
4. are stories always real?

COVID photo narratives

tell a story about protecting the world from COVID and take photos to go with your story

Jessica's photo narrative

Johana's photo narrative

Make a COVID Story!

To make your photo narrative:

- Start by drawing out your story. It could be a real story or a made-up story.
- Record a video that (2-5 minutes) of you telling your story about protecting the world from COVID using your sketch.
- Take at least 5 photos that can help tell your story.

Brainstorm these questions to help you!

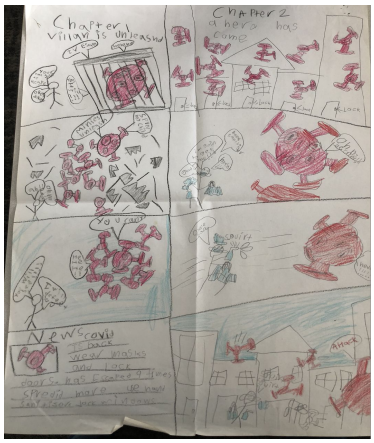
- What's a cool thing that happened to you or your family?
- How did your daily life change? Why?
- Was there ever a problem? How did you solve it?
- What could we do to protect the whole world from COVID?

gallery: photo narratives

1. watch the video
2. look at the photos and sketch
3. answer the questions on the post-its
4. place on poster

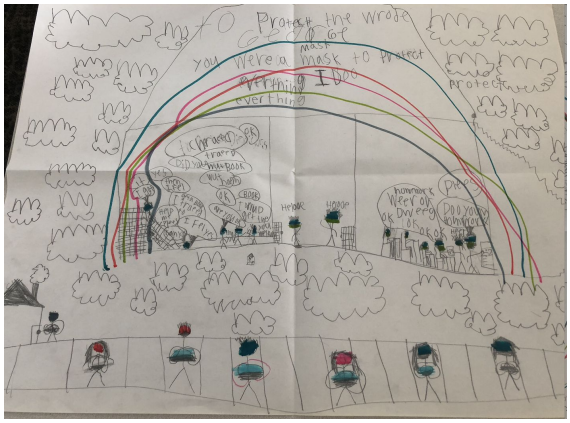
- what is going on in this story?
- was there a problem in this story? how was it solved?
- what more do you want to know about the story?

sketch only



sketch and photos

sketch and video

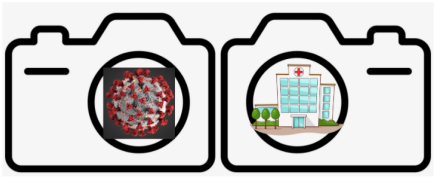


sketch only

One last step!

Please answer a few questions about how this segment went. This helps us learn from you about how to improve the activities.

Scan this QR code and fill out this quick survey.



Segment Five Facilitation Guide
Capstone Project

Overview

This segment is the culmination of the skills and concepts learners acquired throughout the curriculum. The primary goal of the capstone project is for learners to use photographs and other artwork created during the program to tell a cohesive story of protection, or lack thereof, from COVID-19. Learners are welcome to use photos and artwork created during program activities or to design and tell a new story, taking new photos to support that story. This final project can be tailored to learners' or facilitators' needs. In the end, learners should have a final project that will be displayed for an Art Show, in which learners' capstone projects are displayed and shared with one another, friends, family, or other community members.

Note: The facilitator guide below offers one way for learners to create and display their capstone project. There is, however, flexibility with this project based on the facilitator's discretion. Importantly, learners should create a photographic presentation telling a story of protection from pathogens. The precise format of this presentation can be tailored to individual learners and groups.

Big Ideas/Questions

- How can a collection of photographs tell a story of protection from pathogens?
- What forms of protection from pathogens can be part of a story of protecting individuals, communities, and the world?
- How can the composition of photos assist in telling a story?

Grade Level/Age

3rd - 5th grade (approx. ages 8 - 11)

Objectives and Assessment (Science and Art)

Objective	Assessment
Learners tell a cohesive story using photographs.	*Learners are able to use their photographs selected for the capstone to verbally tell their story.*
Learners understand how different forms of protection work to protect from pathogens, such as coronavirus.	*Forms of protection from coronavirus on different scales are present in learners' capstone stories.*

Learners understand and employ elements of photographic composition, such as the rule of thirds and varying vantage points.	*Elements of photographic composition are present in photographs taken/selected for learners' capstone projects.*

National Core Arts Standards

Anchor Standard #1: Generate and conceptualize artistic ideas and work.
Anchor Standard #2: Organize and develop artistic ideas and work.
Anchor Standard #3: Refine and complete artistic work.
Anchor Standard #4: Select, analyze, and interpret artistic work for presentation.
Anchor Standard #5: Develop and refine artistic techniques and work for presentation.
Anchor Standard #6: Convey meaning through the presentation of artistic work.
Anchor Standard #10: Synthesize and relate knowledge and personal experiences to make art.

Next Generation Science Standards

Disciplinary Core Ideas

- ESS3.B Natural Hazards: A variety of natural hazards result from natural processes. Humans cannot eliminate natural hazards but can take steps to reduce their impacts.
- LS2.D Social Interactions and Group Behavior: Being part of a group helps animals obtain food, protect themselves, and cope with changes.

Science and Engineering Practices

- Asking Questions and Defining Problems
- Constructing Explanations and Designing Solutions
- Obtaining, Evaluating, and Communicating Information

Crosscutting Concepts

- Cause and Effect: Events have causes, sometimes simple, sometimes multifaceted.
- Systems and Systems Models: A system can be described in terms of its components and their interactions.
- Scale, Proportion, and Quantity: Natural objects exist from the very small to the immensely large.
- Structure and Function: Different materials have different substructures and substructures have shapes and parts that serve functions.

Time: 2 hours

Materials

- Projector, screen, and computer to display slide decks and photos (alternatively print these out)
- Segment 5 slide deck
- Space for gathering and sharing photos taken by learners
    - Large screen for whole-group sharing?

    - Printed photos for small groups/individuals?
- Cameras
- Community Agreement poster about using/sharing cameras
- Community Agreement poster for discussing each other's photos
- Photo printer or access to a photo printer to print learners' capstone photo selections
- Poster Board with pre drawn "frames" (one per learner)
    - Standard black, white, or colored poster board (22 in. x 28 in.) will work
    - Pre-drawn "frames" on poster boards can help learners distinguish where to decorate and where not to decorate (frame can be drawn 4 in. within the edge of the poster board).
- Assorted art supplies for decorating frames (feathers, glitter glue, alphabet stickers, beads, etc.)
- Glue (glue sticks, wet glue, hot glue) to decorate frames
- Markers
- Coloring pencils
- Double sided tape to mount photos onto posters
- Art Show flyers to send home with learners. This is optional, if planning an art show after the program for learners to share their work with the wider community. You could involve students in co-creating these if there is time or if some students finish their capstone projects early.

Preparation

- Pre-draw frames onto poster boards in advance
- Determine components of the capstone project you want learners to create and curate. Possibilities include:
    - Decorated poster board with photos telling COVID story
    - Artist photo
    - Artist "about me" statement
    - Photo narrative photos with or without video from Segment 4
    - Any other artist products learners may want to share, such as drawings or comics
- Consider how you are going to print all the photos to be mounted to the poster boards and consider what this means for the logistics of learners putting their posters together.
    - On-site printer with photo paper?
    - Send out photos for 1-hour printing at a local store?

Facilitation Guide

Introduction (10 minutes)

- Introduce the Art Show and Capstone Project to learners.
    - Use slide deck for this segment to introduce these two elements:
        - If you are planning an Art Show, the slide deck should be edited to include the details of the Art Show at your particular site, including day, time, location, who is invited, etc. Explain to learners that this is a chance

for them to show their families, friends, and community members their artwork and to practice telling stories using their own photographs.
    - The slide deck should also be edited to include the details of the capstone project that you, the facilitator, have decided on. Here you can introduce the criteria that you are requiring or recommending learners to include in their capstone project. We have filled in this slide with some suggestions of learners' art that could be included, please edit this slide to meet your needs.

Selecting Capstone Photos (15 minutes)

- Explain that the goal of the capstone project is to tell a story about protection from pathogens, such as coronavirus, using photographs that learners have taken.
- Have learners take or select five photos that they have already taken that tell a story of protection from pathogens (facilitators may encourage learners to include more or less than five photos depending on their printer access and ease).
    - Encourage learners to think about what story they would like to communicate and to take or select photos that support telling that story.
    - Also encourage learners to use the rule of thirds or differing vantage points to help tell their stories.
- Determine a way for learners to identify which photos they have selected. If you are using iPads, one possibility is to create a folder in the "Photos" app on each device and have learners place their selected photos in this folder. If you are using physical photos, you could provide folders and have learners put their selected photos in a folder.
- Learners may need hands-on support selecting their photos.
    - It has been helpful to create a spreadsheet or table that indicates when learners are done with an element of their capstone project (such as selecting their photos). See example table here.

Decorating Poster Frame (60+ minutes)

- Using assorted craft supplies, have learners decorate the outer frame of their posters.
- Remind them that the inside of the poster is reserved for their photos, once printed.

Artist Statement and Artist Portrait (optional)

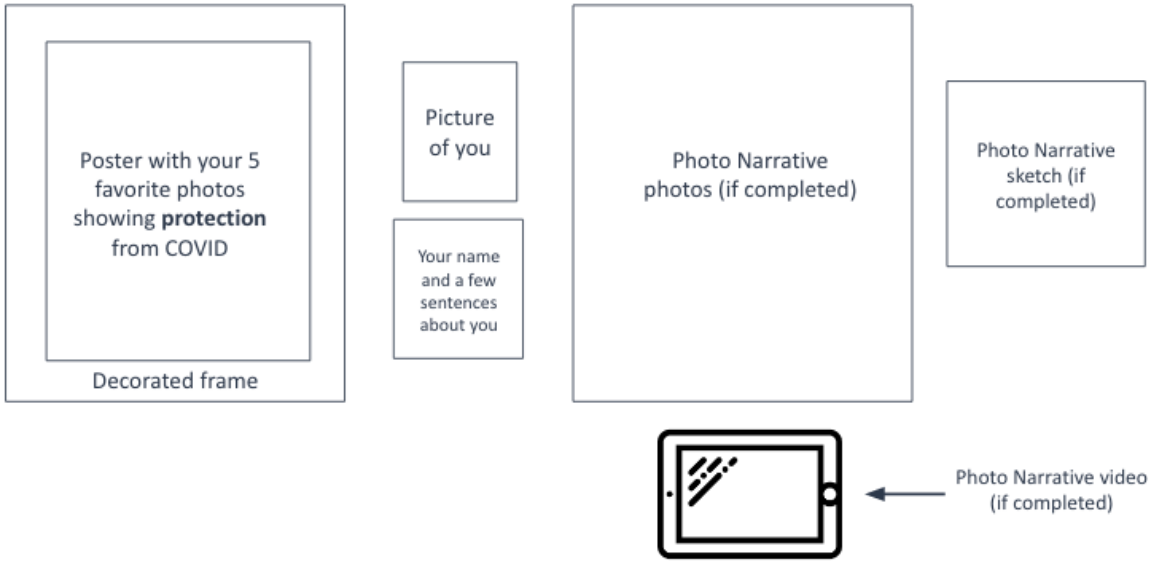
- Give learners the option to include an artist statement and artist portrait as part of their capstone project.
- Artist statements can be written by learners or written with the support of a facilitator.
- The artist statement is an opportunity for the learner to introduce themselves as the artist behind their capstone projects.
- Artist portraits can be taken and printed to go alongside the artist statement if learners would like.
- Note: both of these elements require substantial facilitation and possible behind the scenes work on the facilitators part.
    - Artist statements can be typed up, printed, and mounted near capstone projects displayed at the Art Show.

- The inclusion of artist portraits requires additional photo printing which may or may not be accessible.

Photo Narratives (optional)

- In addition to the capstone project, facilitators may want to offer learners the opportunity to share their photo narratives as part of the Art Show.
- Learners can be given the option to display their photo narrative photos, videos, and any other related artworks.
- As with the artist statements and portraits above, inclusion of the photo narratives is an additional lift for facilitators as it requires additional photo printing.

The slide deck includes a slide that shows what all these elements of a capstone project can look like together (see below). These are not all required. Some learners may choose to only display their photos telling a story of protection from pathogens on their decorated poster board, others may want to display more. What you require/suggest/allow as the facilitator is entirely up to your own discretion.



Tips for Group Participation

- This segment involves lots of independent work. Giving learners freedom with how they develop their projects allows for self-expression beyond their selected photos and stories.
- The capstone activity is intended to be open ended and driven by learners' unique interests and styles. Learners may need 1-on-1 assistance from a facilitator to identify materials and strategies that fit their goals.

Art Show!

- The final activity of Care and Covid is the Art Show - an opportunity for learners to share their capstone projects with one another, friends, family, or the wider community. The Art Show may happen on the same day as the creation of Capstone Projects or on another day later on.
- The Art Show can take a wide variety of forms depending on your context. It should include having all the Capstone Projects on display and open time for learners and invited friends, family, or community members to explore and discuss the art.
- If inviting the wider community, consider involving learners in creating invitations to bring home with information about the event.
- During the art show, encourage learners to talk about their projects and how they created them. What stories are they trying to tell? What artistic choices did they make to tell those stories?
- Encourage friends, family, and community members to ask questions. You might even post some of the VTS questions around the room to get people talking.
- Make it a celebration! To recognize and celebrate learners' achievements we have found it helpful to do things like provide food or snacks, play music selected by learners, and create time for applause.
- If it's not possible to invite outsiders, simply host an Art Show for just the learners. This might look similar to gallery walks from earlier in the program but ideally includes some celebratory components.

Art Party!

- Date
- Time
- Bring anybody you want to share your art with!
  - Parents
  - Grandparents
  - Siblings
  - Cousins
  - Friends

(insert flyer for art show here if applicable)

Poster with your 5 favorite photos showing **protection** from COVID

Decorated frame

Picture of you

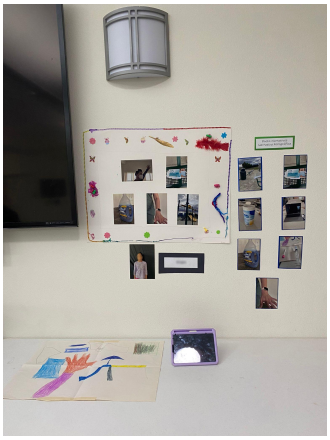
Your name and a few sentences about you

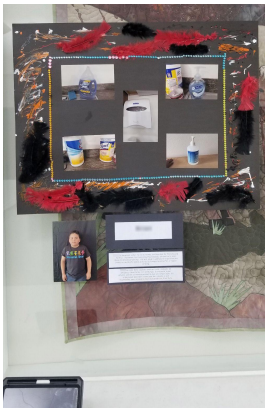
Photo Narrative photos (if completed)

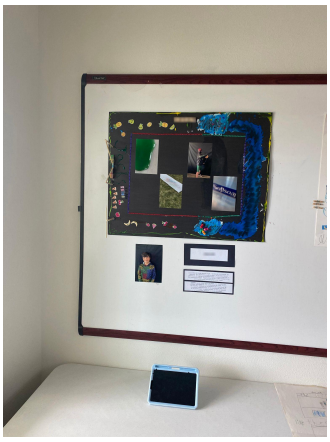
Photo Narrative sketch (if completed)

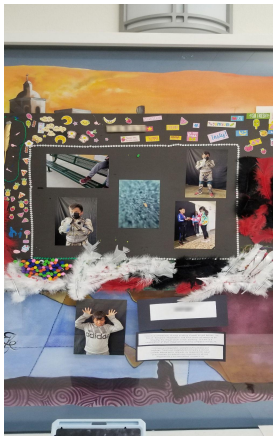
Photo Narrative video (if completed)

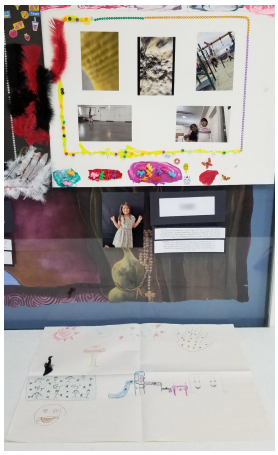
capstone project











Youth Name	Photos Selected for Art Show?	Frame on Poster Decorated?	Artist Photo?	Artist Statement?	Photo Narrative Photos?	Photo Narrative Video?	Photo Narrative Sketch?

One last step!

Please answer a few questions about how this segment went. This helps us learn from you about how to improve the activities.

Scan this QR code and fill out this quick survey.

Care and COVID Career Callouts

Photographer/videographer – Photographers and videographers use their expertise, creativity, and composition skills to produce photos and/or videos that tell stories or record events. Photographers and videographers take and edit photos and videos that can be used for art, news, entertainment, or commercials. Photographers and videographers may get opportunities to travel and meet many interesting people!

Epidemiologist – This job uses math to help us understand and predict things that will make us sick. For example, an epidemiologist can help us find out where a virus will spread. We can use that information to think of ways to block the virus!

Social worker – People in social work help individuals in their community get access to doctors and medicine if they are not able to do that on their own. Social workers help support people so that a community can stay healthy.

Cartographer – This job involves making maps. Maps can show locations of people and things that may affect health. Maps are useful to health care workers that need to know where to go to help. For example, during the COVID epidemic we used maps to see where the most people were becoming sick, which helped us decide where to send masks, vaccines, and medicine.

Museum curator – This job is all about choosing and caring for exhibits in museums. Whether it is in art museums, natural history museums, or children's museums, the curator looks after and manages the artworks, objects, or activities that visitors interact with. Museum curators also help develop the educational materials that go with exhibits.

Demographer – This job is about learning what kinds of people are in a community. Demographers learn the different ages and backgrounds of people, which can be important for health. For example, the COVID virus is very dangerous for older people. Demographers helped us predict what communities had high numbers of older people, which was important for health care workers deciding where to send masks, vaccines, and medicine.

Geneticist – Genes are the instructions inside all living things that explain how to grow and survive. A geneticist is someone that studies genes. The genes of microbes can influence how those microbes make us sick. When our genes don't work properly, that can also make us sick. So, a geneticist can help us figure out how genes influence sickness.

Teacher – Teachers don't just work in schools, they work in lots of different places, such as museums, libraries, and summer camps! Teachers play a very important role in educating people about diseases that can harm them by developing activities through which kids and adults can learn.

Ecologist – People who study how living things interact are called ecologists. These people can help us determine the ways that people and animals contact each other and transmit microbes that can make people sick.

Microbiologist – Many things that make us sick are very small forms of life that we call “microbes”. These are things like bacteria and viruses. Microbiologists are people that study microbes and they can help us understand how they make us sick.

Microscopist – The microbes that make us sick and the changes in our bodies when we get sick are often too small to see with our eyes. We use special machines called “microscopes” to see these small things. People who run these special machines are called microscopists. A microscopist has training and technical expertise in getting pictures of very small objects with the use of a microscope. These microscope pictures help scientists see and learn about viruses.

Microscope engineer - Someone that designs, builds, and repairs microscopes is called a microscope engineer. This person is essential to keeping microscopes working so that we can take pictures of viruses and other very small things that affect our health.

Computer modeler - Many features of viruses are so small that even microscopes will not take pictures that give scientists information they need. Computer modelers can make simulated pictures and movies of viruses, based on information from experiments. This is like making animated movies that help scientists understand how viruses work.

Therapist – Our health includes how we feel and think. This is called “mental health.” Feeling sad, angry, or hopeless for a very long time can be very bad for our health. Therapists are people that help improve our mental health. They are essential to individuals, families, and communities that may struggle with mental health challenges. For example, the COVID pandemic forced many people to stay home, miss school, and avoid friends. This made a lot of people very sad and lonely. Therapists help people manage those difficult feelings.

Health communications – People who write or illustrate can help to educate the public about health. For example, the signs you see in bathrooms reminding you to wash your hands, or the signs in the grocery store reminding you to get your vaccines, were written and illustrated by people who work in “public health communication.” They are essential to making clear messages for the public that can help people understand health risks and how to stay healthy!

Contact tracer – Contact tracers track how the COVID virus spreads and informs people when they may be at risk of contracting the disease. They also identify, interview, and support people who get infected with COVID-19. Contact tracers assess their symptoms and risk, and provide advice for next steps (e.g., receiving treatment or testing).

Pharmacist – Pharmacists give out medications to patients and advise them on using medications safely. They also help screen for certain diseases, provide immunizations (such as the COVID-19 vaccine), and offer advice on healthy lifestyles.

Next Generation Science Standards	Segment One	Segment Two	Segment Three	Segment Four	Segment Five
Disciplinary Core Ideas					
LS1.A		X			
ESS3.B	X	X	X	X	X
LS2.D			X	X	X
PS1.A		X			
Science and Engineering Practices					
Asking questions and defining problems	X	X	X	X	X
Developing and using models		X	X	X	
Planning and carrying out investigations	X		X	X	
Constructing explanations and designing solutions	X	X	X	X	X
Obtaining, evaluating, and communicating information	X	X	X		X
Cross Cutting Concepts					
Patterns	X		X	X	
Cause and effect		X	X	X	X
Scale, proportion, and quantity	X	X	X	X	X
Systems and system models		X	X	X	X
Structure and function			X		X

National Core Arts Standards	Segment One	Segment Two	Segment Three	Segment Four	Segment Five
Anchor Standard 1	X	X	X	X	X
Anchor Standard 2	X	X	X	X	X
Anchor Standard 3					X
Anchor Standard 4	X	X			X
Anchor Standard 5		X			X
Anchor Standard 6	X	X			X
Anchor Standard 7	X	X	X	X	
Anchor Standard 8	X	X	X	X	
Anchor Standard 9					
Anchor Standard 10		X			X
Anchor Standard 11	X	X			

Additional Resources

Art Resources

Visual Thinking Strategies (https://vtshome.org/)

National Geographic photo journal about the pandemic (https://www.nationalgeographic.com/culture/article/photos-show-the-first-two-years-of-a-world-transformed-by-covid19)

Time Magazine photo journal about the pandemic (https://time.com/covid-19-one-year-later-america-photos/)

National Core Arts Standards (https://www.nationalartsstandards.org)

Science Resources

Next Generation Science Standards (https://www.nextgenscience.org)

An overview of systems thinking in the context of Earth science (https://activatelearning.com/systemsthinking/)

All *Extended Science Background* pathogen information can be found from the Center for Disease Control and Prevention's (CDC) website:

- Measles (https://www.cdc.gov/measles/index.html)
- Influenza (https://www.cdc.gov/flu/about/keyfacts.htm) and the Common Cold (https://www.cdc.gov/features/rhinoviruses/index.html)
- Chicken Pox (https://www.cdc.gov/chickenpox/index.html)
- Coronaviruses (https://www.cdc.gov/sars/index.html, https://www.cdc.gov/coronavirus/mers/index.html)
- 2009 H1N1 Pandemic (https://www.cdc.gov/flu/pandemic-resources/2009-h1n1-pandemic.html)