PITTSGROVE TOWNSHIP SCHOOL DISTRICT

Pittsgrove Township
School District
P.R.I.D.E. Patience Respect Integrity Diligence Empathy

Course Name: Infection Detection	**Grade Level(s): 5**
Department: STEM	**Credits: N/A**
BOE Adoption Date: October 17, 2019	**Revision Date(s):**

Course Description

In this course students are presented with a problem where numerous students at a school are sick. Students learn about transmission of disease through a simulation and compare communicable and non-communicable diseases. Students work through the scientific method from an experiment related to preventing the spread of germs. Students determine ways to prevent the spread of infection using evidence from their experiments. Students investigate how the immune system keeps away germs to keep us healthy. Bacteria and viruses are determined to be a cause of diseases, and students use information learned and patient symptoms to identify the disease agent causing a simulated disease outbreak. Using epidemiology practices, students create a flow chart and determine the likely source of an infection that is spreading through a fictional school.

Mission Statement

The Pittsgrove Township School District believes in growing all learners to thrive. *The district offers an intellectually rigorous, dynamic curriculum aligned to state and national standards coupled with research-based practices in classrooms. The Pittsgrove Township School District strives to highlight critical thinking, problem-solving, intercultural literacy, digital literacy, collaboration, innovation, and a growth mindset as part of the instructional core of learning. The district provides high quality resources to provide young people the knowledge they need to approach the future as leaders and learners.*

Curriculum & Instruction Goals

1. To ensure students are college and career ready upon graduation
2. To vertically and horizontally align curriculum PreK-12 to ensure successful transition of students at each grade level
3. To identify individual student strengths and weaknesses utilizing various assessment measures (formative, summative, alternative, etc.) so as to differentiate instruction while meeting the rigor of the applicable content standards
4. To improve student achievement as assessed through multiple measures including, but not limited to, state testing, local assessments, and ongoing progress monitoring

How to Read this Document

This curricular document contains both a *pacing guide* and *curriculum units*. The pacing guide serves to communicate an estimated timeframe as to *when* critical knowledge and skills will be taught throughout the year. The pacing, however, may differ slightly depending upon the unique needs of each learner. The *curriculum units* contain more detailed information as to the content, goals, objectives, instructional strategies, resources, and assessments.

NJ Administrative Code and Statutes Key
^=Amistad Law **O=Diversity & Inclusion Law** **<>=Holocaust** **+=LGBT and Disabilities Law** ***=AAPI (Asian American and Pacific Islanders)** **$=Financial Literacy** **Use this key to understand where the NJ mandates are being implemented in the K-12 curriculum units.**

Pacing Guide

Course Title: Infection Detection
Prerequisite(s):

Unit Title	Duration/ Days	Related Standards	Learning Goals	Critical Knowledge and Skills
Activity 1: Glow Germ	**10 days**	• 3-5-ETS1-1 • 3-5-ETS1-2 • CCSS.ELA-LITERACY.RI.5.4 • CCSS.ELA-LITERACY.SL.5.1 • 2.1.4.C.1 • 2.1.4.C.2	• *Students will recognize that germs can make a person sick and that bacteria and viruses are germs.* • *Students will describe the various ways germs can be passed from person to person.* • *Students will identify behaviors that promote good health.* • *Students will Maintain a notebook to document work.* • *Students will share findings and conclusions with others.* • *Students will organize and analyze medical data to determine the likely source of an infection.* • *Students will demonstrate the*	• Play modified game of 7-up with a mystery patient 0 • Use UV light to determine spread of germs • Record the path of transmission in their Launch Logs and explain how the germs were spread • Create a flow chart of patient 0 • Discuss and write vocabulary in interactive notebook adding images with vocabulary • Read and highlight modes of transmission and add images • Watch video Bill Nye on germs • Read the Infection: Detection Introduction story

			spread of infection using a graphical organizer and justify connections between infected individuals.	
Activity 2: The Scientific Method	**15 days**	• 3-5-ETS1-1 • 3-5-ETS1-2 • 3-5-ETS1-3 • CCSS.ELA-LITERACY.RI.5.4 • CCSS.ELA-LITERACY.SL.5.1 • 2.1.4.C.1 • 2.1.4.C.2	• *Students will identify behaviors that promote good health* • *Students will create a scientific lab including a question, hypothesis, procedure with constants, data chart, and conclusion* • *Students will perform an investigation in order to draw conclusions.* • *Students will maintain a notebook to document work.* • *Students will share findings and conclusions with others.* • *Students will calculate average*	• Draw a diagram of the scientific method an/ or create word wall • Write and discuss the question, "Does using plain water and soap remove more germs than just plain water?" • Watch video on creating a good hypothesis: emphasis the IF THAN statement • Fix a given procedure to include precise constants • Watch video on writing a good procedure https://www.youtube.com/watch?v=Ct-lOOUqmyY • Following the procedure complete experiment in pairs • Complete data chart • Calculate an average • Write a conclusion based on data • Create a 2nd experiment based on removing germs • Working in pairs write

				question, hypothesis, procedure, data chart, and conclusion (Get teacher approval after each step to move forward) ● Watch MythBusters Independent and Dependent variables video ● Write and discuss scientific method vocabulary ● Play quizzes review of IV and DV and constants
Activity 3: Infection Fighter	**5 days**	● CCSS.ELA-LITERACY.RI.5.4 ● 5-LS2-1 ● 2.1.4.C.1 ● 2.1.4.C.2	● *Students will identify the ways that the body protects and defends itself against infection.* ● *Students will maintain a notebook to document work.* ● *Students will create a diagram with labels and text boxes* ● *Students will understand the importance of scientific diagrams*	● Read, “Sick Simon” ● Discuss parts of the body involved in the immune system ● Use interactive website for understanding the role of the body parts ● Use google slides to create body parts and label on diagram, “Infection Fighter” ● Color body parts and finalize labels using shapes and arrows on google slides ● Create text boxes that show role of body part in the immune system ● Share and discuss other scientific diagrams
Unit: Project: What is Mystery Disease?	**15 days**	● 3-5-ETS1-1 ● 3-5-ETS1-2	● *Students will recognize that germs can make a*	● Reread the Infection: Detection Introduction story or remind students of the

		• 3-5-ETS1-3 • CCSS.ELA-LITERACY.RI.5.2 • CCSS.ELA-LITERACY.RI.5.4 • CCSS.ELA-LITERACY.SL.5.1 • 2.1.4.C.1 • 2.1.4.C.2	*person sick and that bacteria and viruses are germs.* • *Students will recognize that bacteria and viruses are microscopic in size and that they cannot be seen with the naked eye.* • *Students will use scientific tools to examine cells or organisms that are microscopic.* • *Students will maintain a notebook to document work.* • *Students will share findings and conclusions with others.* • *Students will organize and analyze medical data to determine the likely source of an infection.*	story that sets the stage for this project and the problem. • Hold a discussion about what it means to be sick versus well. In what ways does our body tell us that we are sick? Do different illnesses cause our body to react in different ways? • Complete their first attempt at grouping the disease cards into communicable and non-communicable without reading the information inside of the card. • Read the information inside of each disease card together as a class to ensure students understand the information presented. The teacher will clarify any misconceptions or misunderstandings. • Students should identify the following diseases is communicable: Write in Log • Common cold • Strep throat • Measles • Flu (influenza) • Chickenpox

				• Whooping cough (pertussis) • Pink eye (conjunctivitis) • Ebola • Tuberculosis • Identify that bacteria or viruses are the cause of all of these illnesses. • Read informational text about bacteria and viruses on resource sheet • Complete fill in the blank corresponding activity • Google pictures of viruses and bacteria and determine if they have different shapes • Draw a virus and bacteria • View a picture of *A. equuli* bacteria using the Microorganisms PDF. Students sketch a picture of the bacteria in their Launch Log. The teacher should note that the magnification shown is 1,000x. This means that the bacteria is magnified 1,000 times more than what you can see with your naked eye. • Examine a picture of the influenza virus in the

				curriculum course. ● Introduce parts of microscope and sketch and label and create text boxes ● View bacteria and virus under microscope ● Clear misconceptions of the difference between a symptom and a disease ● Introduce the Mystery Disease project ● Read “nurses notes” and circle/highlight symptoms only ● Look for repeated patterns in symptoms and collaborate with groups ● Create a patient symptom chart ● Eliminate disease based on evidence ● Write a paragraph explaining what disease is the mystery disease within the school. Cite evidence based on symptom chart. Include information about who has a different disease and predict what they might have
Unit Problem: **Who is Patient 0**	**15 days**	● 3-5-ETS1-1 ● 3-5-ETS1-2	● *Students will recognize that germs can make a*	● Introduce problem of patient 0 from story the Hunt for Patient 0

		● 3-5-ETS1-3 ● CCSS.ELA-LITERACY.RI.5.3 ● CCSS.ELA-LITERACY.RI.5.4 ● CCSS.ELA-LITERACY.RI.5.7 ● CCSS.ELA-LITERACY.RI.5.9 ● CCSS.ELA-LITERACY.SL.5.1 ● CCSS.ELA-LITERACY.SL.5.2 ● 2.1.4.C.1 ● 2.1.4.C.2	*person sick and that bacteria and viruses are germs.* ● *Students will describe the various ways germs can be passed from person to person.* ● *Students will recognize that bacteria and viruses are microscopic in size and that they cannot be seen with the naked eye.* ● *Students will identify behaviors that promote good health.* ● *Students will maintain a notebook to document work.* ● *Students will share findings and conclusions with others.* ● *Students will organize and analyze medical data to determine the likely source of an infection.* ● *Students will demonstrate the spread of infection using a graphical organizer and justify connections between infected individuals.*	● Brainstorm information that would be helpful to determine patient 0 ● Use evidence documents to create a flowchart of patient 0 ● Collaborate with other groups to determine final decision ● Create a rough draft of flowchart using an investigation board or scrap paper and be approved by teacher ● Create final flow chart on google drawings https://docs.google.com/presentation/d/1_N5imBEW40SC-LiW4IS6bbRf7Hw0Vg0zfyyyXoug3NU/edit?usp=sharing ● Share final flow charts

			• *Students will follow a step by step method to solve a problem.*	

Instructional Unit Map				
Course Title: Infection				
Unit Title	Activity 1: Intro. Patient 0		**Start Date:**	Trimester
			Length of Unit:	10 days
Content Standards *What do we want them to know, understand, & do?*	• 3-5-ETS1-1 Define a simple problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost. • 3-5-ETS1-2 Generate and compare multiple possible solutions to a problem based on how	**Learning Goals**	*Students will be able to:* • *Recognize that germs can make a person sick and that bacteria and viruses are germs.* • *Describe the various ways germs can be passed from person to person.* • *Identify behaviors that promote good health.* • *Maintain a notebook to document work.* • *Share findings and conclusions with others.* • *Organize and analyze medical data to determine the likely source of an infection.* • *Demonstrate the spread of infection using a flow chart and justify connections between infected individuals.*	

	well each is likely to meet the criteria and constraints of the problem. ● CCSS.ELA-LITERACY.RI.5.4 Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 5 topic or subject area. ● CCSS.ELA-LITERACY.SL.5.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 5 topics and texts, building on others' ideas and expressing		

<table>
<tr><td></td><td colspan="2">their own clearly.</td><td></td><td></td></tr>
<tr><td>Essential Questions</td><td colspan="4">How can germs spread from person to person?
How does the body defend itself from infectious disease?
How can scientists determine how a germ spreads through a group of people?
Why is finding Patient 0 important?</td></tr>
<tr><td rowspan="2">Assessments
How will we know they have gained the knowledge & skills?</td><td colspan="2">Formative</td><td>Summative</td><td>Alternative</td></tr>
<tr><td colspan="2">Launch log
Questioning
Observation
Classroom glow chart
Patient 0 flowchart</td><td>Activity 1 quiz</td><td></td></tr>
<tr><td>Unit Pre-Assessment(s)
What do they already know?</td><td colspan="4">Teacher generated introduction questions</td></tr>
<tr><td>Instructional Strategies/Student Activities</td><td colspan="4">Play modified game of 7-up with a mystery patient 0
Use UV light to determine spread of germs
Record the path of transmission in their Launch Logs and explain how the germs were spread
Create a flow chart of patient 0
Discuss and write vocabulary in launch logs
Read and highlight modes of transmission
Watch video Bill Nye on germs
Read the Infection: Detection Introduction story</td></tr>
</table>

Instructional/Assessment Scaffolds *(Modifications /Accommodations) – planned for prior to instruction*	**English Language Learners**	**Special Education Learners**	**Struggling Learners**	**Advanced Learners**
	• Additional time • Flexibility in flowchart details • Allow redos/retakes • Read aloud quiz • Clarify quiz directions • Preview quiz procedures • Give one on one quiz • Provide a buddy	• Additional time • Flexibility in flowchart details • Allow redos/retakes • Read aloud • Clarify quiz directions • Preview quiz procedures • Flexible grouping • Guide to appropriate area of notebook during quiz	• Additional time • Flexibility in flowchart details • Read aloud • Clarify quiz directions • Allow for retakes • Flexible grouping	• Create several flowcharts • Google classroom enrichment sites • Working with other accelerated learners
Differentiated Instructional Methods: *(Multiple means for students to access content and multiple modes for student to express understanding)*	**Access** (Resources and/or Process) • Google classroom • Various examples of flow charts		**Expression** (Products and/or Performance) • Various flow charts	

Vocabulary *Highlight key vocabulary (both Tier II and Tier III words)*	**Tier 2** ● Patient Zero ● Simulate ● Germ ● Infection ● Contagious ● Communicable Disease ● Scientist ● Flow chart **Tier 3** ● One to one contact ● Direct contact ● Indirect contact ● Airborne contact ● Vehicle contact ● Vector contact ● Criteria ● Constraints
Integration of Technology SAMR	Substitution: Use Google Classroom to take and review notes, concepts, and instructions https://classroom.google.com/c/MTU4MzYwNTI0ODVa Augmentation Google Form for quiz

<table>
<tr><td></td><td colspan="2">https://forms.gle/UxGuHbT1rBHBYoZc8
Students watch review videos
Modification:
Students work through interactive sites</td></tr>
<tr><td>Interdisciplinary Connections
NJ Student Learning Standards</td><td colspan="2">2.1.4.C.1 Explain how most diseases and health conditions are preventable.
2.1.4.C.2 Justify how the use of universal precautions, sanitation and waste disposal, proper food handling and storage, and environmental controls prevent diseases and health conditions.</td></tr>
<tr><td rowspan="2">21st Century Themes/Skills
P21 Framework</td><td>Themes</td><td>Skills</td></tr>
<tr><td>• Global Awareness
• Health Literacy</td><td>• Flexibility and adaptability
• Initiative and self direction
• Leadership and responsibility
• Creativity
• Collaboration
• Communication
• Critical Thinking
• Media Literacy</td></tr>
<tr><td>Resources/Materials</td><td colspan="2">• PLTW: Project Lead the Way site
• Google classroom teacher created slides
• Launch logs
• Glow Germ
• IV flashlights
• Videos</td></tr>
</table>

	Bill Nye https://classroom.google.com/c/MTU4MzYwNTI0ODVa

Instructional Unit Map			
Course Title: Infection Detection			
Unit Title	Activity 2: Scientific Method: What removes the most glow germs from hands?	**Start Date:**	
		Length of Unit:	15 days
Content Standards *What do we want them to know, understand, & do?*	● 3-5-ETS1-1 Define a simple problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost. ● 3-5-ETS1-2 Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of	**Learning Goals**	*Students will be able to:* ● *Identify behaviors that promote good health* ● *Create a scientific lab including a question, hypothesis, procedure with constants, data chart, and conclusion* ● *Perform an investigation in order to draw conclusions.* ● *Maintain a notebook to document work.* ● *Share findings and conclusions with others.* ● *Calculate average*

	the problem. ● 3-5-ETS1-3 Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved ● CCSS.ELA-LITERACY.RI.5.4 Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 5 topic or subject area. ● CCSS.ELA-LITERACY.SL.5.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and		

	teacher-led) with diverse partners on grade 5 topics and texts, building on others' ideas and expressing their own clearly.		
Essential Questions	1. *How can germs spread from person to person?* 2. *How does the body defend itself from infectious disease?* 3. *How can scientists determine how a germ spreads through a group of people?* 4. *How can scientists use the scientific method to solve problems?*		
Assessments *How will we know they have gained the knowledge & skills?*	**Formative**	**Summative**	**Alternative**
	● Launch log ● Questioning ● Observation ● Diagram of scientific method ● Experiment: Does plain tap water and soap pr plain tap water remove move glow germ?	● Experiment: Students determine question and work through scientific method ● Test on scientific method	

<table>
<tr><td>Unit Pre-Assessment(s)
What do they already know?</td><td colspan="4">Teacher generated introduction questions
Pretest</td></tr>
<tr><td>Instructional Strategies/Student Activities</td><td colspan="4">● Draw a diagram of the scientific method
● Write and discuss the question, “Does using plain water and soap remove more germs than just plain water?”
● Watch video on creating a good hypothesis: emphasis the IF THAN statement
● Fix a given procedure to include precise constants
● Following the procedure complete experiment in pairs
● Complete data chart
● Calculate an average
● Write a conclusion based on data
● Create a 2nd experiment based on removing germs
● Working in pairs write question, hypothesis, procedure, data chart, and conclusion (Get teacher approval after each step to move forward)
● Watch MythBusters Independent and Dependent variables video
● Write and discuss scientific method vocabulary</td></tr>
<tr><td rowspan="2">Instructional/Assessment Scaffolds (Modifications /Accommodations) – planned for prior to instruction</td><td>English Language Learners</td><td>Special Education Learners</td><td>Struggling Learners</td><td>Advanced Learners</td></tr>
<tr><td>● Additional time
● Allow redos/retakes
● Read aloud test
● Clarify test directions
● Preview test procedures
● Give one on one test</td><td>● Additional time
● Allow redos/retakes
● Read aloud test
● Clarify test directions
● Preview test</td><td>● Additional time
● Allow redos/retakes
● Read aloud test as needed
● Clarify test directions
● Preview test procedures
● Flexible grouping</td><td>● Google classroom enrichment
● Create an additional experiment if interested
● Working with other accelerated</td></tr>
</table>

<table>
<tr><td></td><td>Provide a buddy</td><td>procedures
Flexible grouping
Guide to appropriate area of notebook during test</td><td></td><td>learners</td></tr>
<tr><td>Differentiated Instructional Methods:
(Multiple means for students to access content and multiple modes for student to express understanding)</td><td colspan="2">Access (Resources and/or Process)
Google Classroom
Hard copies of experiments</td><td colspan="2">Expression (Products and/or Performance)
Final lab report</td></tr>
<tr><td>Vocabulary
Highlight key vocabulary (both Tier II and Tier III words)</td><td colspan="4">Tier 2
Scientific Method / Scientific Inquiry Process
Question
Hypothesis
Procedure
Data
Conclusion
Independent Variable
Dependent Variable
Constants
Average
Experiments
Criteria
Constraints</td></tr>
</table>

<table>
<tr><td>Integration of Technology SAMR</td><td>Substitution:
Use Google Classroom to take and review notes, concepts, and instructions
https://classroom.google.com/c/MTU4MzYwNTI0ODVa
Augmentative
Google form pretest and posttest
https://forms.gle/Za3Vg757WKr2xTsMA
Students watch review videos
Modification:
Students work through interactive sites</td></tr>
<tr><td>Interdisciplinary Connections
NJ Student Learning Standards</td><td>• 2.1.4.C.1 Explain how most diseases and health conditions are preventable.
• 2.1.4.C.2 Justify how the use of universal precautions, sanitation and waste disposal, proper food handling and storage, and environmental controls prevent diseases and health conditions.</td></tr>
<tr><td>21st Century Themes/Skills
P21 Framework</td><td><table><tr><th>Themes</th><th>Skills</th></tr><tr><td>• Global Awareness
• Health Literacy</td><td>• Flexibility and adaptability
• Initiative and self direction
• Leadership and responsibility
• Creativity
• Collaboration
• Communication
• Critical Thinking
• Media Literacy</td></tr></table></td></tr>
<tr><td>Resources/Materials</td><td>• PLTW: Project Lead the Way site</td></tr>
</table>

	• Google classroom teacher created slides • Launch logs • Glow Germ • IV flashlights • Paper towels • Boxes (to put in hands in for darkness) • Lab on Google Slide • Various hand cleaners (dish soap, vinegar, hand sanitizer, etc..) • Videos Myth Busters https://www.youtube.com/watch?v=l0jTMDtX4WY

Instructional Unit Map				
Course Title: Infection Detection				
Unit Title	Activity 3: Infection Fighter		**Start Date:**	
			Length of Unit:	10 days
Content Standards *What do we want them to know, understand, & do?*	• CCSS.ELA-LITERACY.RI.5.4 Determine the meaning of general academic and domain-specific words and phrases in a text relevant	**Learning Goals**	*Students will be able to:* • *identify the ways that the body protects and defends itself against infection.* • *Maintain a notebook to document work.* • *Create a diagram with labels and text boxes* • *Understand the importance of scientific diagrams*	

<table>
<tr><td></td><td colspan="3">to a grade 5 topic or subject area.</td><td></td></tr>
<tr><td>Essential Questions</td><td colspan="4">How can germs spread from person to person?
How does the body defend itself from infectious disease?
How can a diagram help scientists relay ideas?</td></tr>
<tr><td rowspan="2">Assessments
How will we know they have gained the knowledge & skills?</td><td>Formative</td><td colspan="2">Summative</td><td>Alternative</td></tr>
<tr><td>● Launch log
● Questioning
● Observation
● Infection Fighter sketch</td><td colspan="2">● Infection Fighter final project Part 1 and Part 2 https://docs.google.com/presentation/d/1hLZoGCqq7ZfJAI43OzZXFUdMzZ3HrEyi4NUuM7IeoBk/edit?usp=sharing
and
https://docs.google.com/presentation/d/1YXwBRbIU8qaxCZnpRTj6OePyqAqj15L5KFF7rKRLl7E/edit?usp=sharing</td><td></td></tr>
<tr><td>Unit Pre-Assessment(s)
What do they already know?</td><td colspan="4">Teacher generated introduction questions</td></tr>
<tr><td>Instructional Strategies/Student Activities</td><td colspan="4">● Read, “Sick Simon”
● Create Personification of Germ on Hands activity
https://docs.google.com/presentation/d/1TivHzc-f01aHbuRGxrMv9YXqemqX-jUaFbFSL2_N_pg/edit?usp=sharing</td></tr>
</table>

<table>
<tr><td></td><td colspan="4">

- Discuss parts of the body involved in the immune system
- Use interactive website for understanding the role of the body parts
- Use Google Slide tools to create body parts and label on diagram, “Infection Fighter”
- Color body parts and finalize label using Google slide tools
- Create text boxes that show role of body part in the immune system
- Share and discuss other scientific diagrams

</td></tr>
<tr><td rowspan="2">Instructional/Assessment Scaffolds (Modifications /Accommodations) – planned for prior to instruction</td><td>English Language Learners</td><td>Special Education Learners</td><td>Struggling Learners</td><td>Advanced Learners</td></tr>
<tr><td>

- Additional time
- Provide a buddy
- Provide sample Infection Fighter diagram

</td><td>

- Additional time
- Provide sample Infection Fighter diagram
- Provide pre-sketched Infection Fighter diagram

</td><td>

- Additional time
- Flexible grouping
- Provide sample Infection Fighter diagram
- Provide pre-sketched Infection Fighter diagram if needed

</td><td>

- Google Classroom enrichment activities
- Add additional details to Infection Fighter diagram that interest student

</td></tr>
<tr><td rowspan="2">Differentiated Instructional Methods:
(Multiple means for students to access content and multiple modes for student to express understanding)</td><td colspan="2">Access (Resources and/or Process)</td><td colspan="2">Expression (Products and/or Performance)</td></tr>
<tr><td colspan="2">

- Google Classroom
- Sample Infection Fighters

</td><td colspan="2">

- Infection Fighter Diagram
- Personification of Germs on Hands

</td></tr>
</table>

<table>
<tr><td>Vocabulary
Highlight key vocabulary (both Tier II and Tier III words)</td><td><u>Tier 2</u>
Skin
Mucus
Cilia
Lymph Glands
Tonsils
White Blood Cells
Liver
Spleen
Stomach
Diagrams
personification</td></tr>
<tr><td>Integration of Technology SAMR</td><td>Substitution:
Use Google Classroom to take and review notes, concepts, and instructions
https://classroom.google.com/c/MTU4MzYwNTI0ODVa
Augmentative
Students watch review videos
Modification:
Students work through interactive sites</td></tr>
<tr><td>Interdisciplinary Connections
NJ Student Learning Standards</td><td>5-LS2-1. Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.
2.1.4.C.1 Explain how most diseases and health conditions are preventable.
2.1.4.C.2 Justify how the use of universal precautions, sanitation and waste disposal, proper food handling and storage, and environmental controls prevent diseases and health conditions.</td></tr>
<tr><td>21st Century Themes/Skills
P21 Framework</td><td><table><tr><th>Themes</th><th>Skills</th></tr><tr><td>Global Awareness
Health Literacy</td><td>Flexibility and adaptability</td></tr></table></td></tr>
</table>

		• Initiative and self direction • Leadership and responsibility • Creativity • Collaboration • Communication • Critical Thinking • Media Literacy
Resources/Materials	• PLTW: Project Lead the Way site • Google classroom teacher created slides • Launch logs • Colored pencils • Web sites Immune System http://studyjams.scholastic.com/studyjams/jams/science/human-body/immune-system.htm • Videos Sick Simon https://www.youtube.com/watch?v=LIWXpiy8wwo	

<table>
<tr><th colspan="4">Instructional Unit Map</th></tr>
<tr><td colspan="4">Course Title:: Infection Detection</td></tr>
<tr><td>Unit Title</td><td colspan="2">Project: Mystery Disease</td><td>Start Date:
Length of Unit: 15 days</td></tr>
<tr><td>Content Standards
What do we want them to know, understand, & do?</td><td>● 3-5-ETS1-1 Define a simple problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.
● 3-5-ETS1-2 Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.
● 3-5-ETS1-3 Plan and carry out fair</td><td>Learning Goals</td><td>Students will be able to:
● Recognize that germs can make a person sick and that bacteria and viruses are germs.
● Recognize that bacteria and viruses are microscopic in size and that they cannot be seen with the naked eye.
● Use scientific tools to examine cells or organisms that are microscopic.
● Maintain a notebook to document work.
● Share findings and conclusions with others.
● Organize and analyze medical data to determine the likely source of an infection.</td></tr>
</table>

	tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved ● CCSS.ELA-LITERACY.RI.5.2 Determine two or more main ideas of a text and explain how they are supported by key details; summarize the text. ● CCSS.ELA-LITERACY.RI.5.4 Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 5 topic or subject area. ● CCSS.ELA-LITERACY.SL.5.1 Engage		

	effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 5 topics and texts, building on others' ideas and expressing their own clearly.		
Essential Questions	1. *How can germs spread from person to person?* 2. *How does the body defend itself from infectious disease?* 3. *How can medical professionals use patient symptoms to diagnose illness?* 4. *How can scientists determine how a germ spreads through a group of people?* 5. *Why is it necessary to determine a disease spreading in an environment?* 6. *How is finding Patient 0 beneficial and what do scientists do with the information?*		
Assessments *How will we know they have gained the knowledge & skills?*	**Formative**	**Summative**	**Alternative**
	● Launch log ● Questioning ● Observation ● Communicable vs.	● Mystery Disease project including: nurse's symptoms circled, patient symptom chart, and final	

	noncommunicable diseases cards ● Bacteria vs viruses fill in the blank ● Drawings of virus and bacteria ● Diagram of microscope	summary paragraph	
Unit Pre-Assessment(s) *What do they already know?*	Teacher generated introduction questions		
Instructional Strategies/Student Activities	● Reread the Infection: Detection Introduction story or remind students of the story that sets the stage for this project and the problem. ● Hold a discussion about what it means to be sick versus well. In what ways does our body tell us that we are sick? Do different illnesses cause our body to react in different ways? ● Complete their first attempt at grouping the disease cards into communicable and non-communicable without reading the information inside of the card. ● Read the information inside of each disease card together as a class to ensure students understand the information presented. The teacher will clarify any misconceptions or misunderstandings. ● Students should identify the following diseases is communicable: Write in Launch Log ● Common cold ● Strep throat ● Measles ● Flu (influenza) ● Chickenpox ● Whooping cough (pertussis) ● Pink eye (conjunctivitis) ● Ebola ● Tuberculosis		

	● Identify that bacteria or viruses are the cause of all of these illnesses. ● Read informational text about bacteria and viruses on resource sheet ● Underline or highlight any important information and write any main ideas in the column on the right. ● Complete fill in the blank corresponding activity ● Display a picture of *A. equuli* bacteria using the Microorganisms PDF. Students sketch a picture of the bacteria in their Launch Log. The teacher should note that the magnification shown is 1,000x. This means that the bacteria is magnified 1,000 times more than what you can see with your naked eye. ● Examine a picture of the influenza virus in the curriculum course. ● Students sketch a picture of the virus in their Launch Log. The teacher should note that the magnification shown is 450,000x. This means that the virus is magnified 450,000 times what you can see with your naked eye. ● Introduce parts of microscope and sketch and label ● Clear misconceptions of the difference between a symptom and a disease ● Introduce the Mystery Disease project ● Read "nurses notes" and circle symptoms only ● Look for repeated patterns in symptoms and collaborate with groups ● Create a patient symptom chart ● Eliminate disease based on evidence ● Write a paragraph explaining what disease is the mystery disease within the school. Cite evidence based on symptom chart. Include information about who has a different disease and predict what they might have

Instructional/Assessment Scaffolds *(Modifications /Accommodations) – planned for prior to instruction*	**English Language Learners**	**Special Education Learners**	**Struggling Learners**	**Advanced Learners**
	● Additional time ● Vary essay lengths ● Allow redos/retakes ● Provide a buddy	● Additional time ● Vary paragraph length	● Additional time ● Vary paragraph lengths Or allow list for answers ● Allow redos/retakes ● Flexible grouping	● Google Classroom enrichment activities ● Collaborate

	• Flexible grouping	• Flexible grouping		with multiple groups • Give additional information in paragraph that student wants to share
Differentiated Instructional Methods: *(Multiple means for students to access content and multiple modes for student to express understanding)*	**Access** (Resources and/or Process) • Google Classroom • Hard Copies of Evidence papers		**Expression** (Products and/or Performance) • Modified Evidence Documents • paragraphs	
Vocabulary *Highlight key vocabulary (both Tier II and Tier III words)*	<u>Tier 2</u> • Communicable • Non Communicable • Symptoms • Evidence • Documents • Criteria • Constraints • Diseases • Bacteria • Virus • Microscope • Common cold • Strep throat • Measles • Flu (influenza) • Chickenpox			

<table>
<tr><td></td><td colspan="2">

Whooping cough (pertussis)
Pink eye (conjunctivitis)
Ebola
Tuberculosis

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Use Google Classroom to take and review notes, concepts, and instructions
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<tr><td>

Global Awareness
Health Literacy

</td><td>

Flexibility and adaptability
Initiative and self direction
Leadership and responsibility
Creativity
Collaboration
Communication
Critical Thinking
Media Literacy

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<tr><td>Resources/Materials</td><td colspan="2">

PLTW: Project Lead the Way site
Google classroom teacher created slides
Launch logs

</td></tr>
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	• Colored pencils • Microscope Images • Videos Bacteria Video https://classroom.google.com/c/MTU4MzYwNTI0ODVa Communicable and Non Communicable https://classroom.google.com/c/MTU4MzYwNTI0ODVa • Web sites Bacterial Cell Game http://www.sheppardsoftware.com/health/anatomy/cell/bacteria_cell_game.htm

Instructional Unit Map			
Course Title: : Infection Detection			
Unit Title	Problem: Mystery Patient 0	**Start Date:**	
		Length of Unit:	15 days
Content Standards *What do we want them to know, understand, & do?*	• 3-5-ETS1-1 Define a simple problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or	**Learning Goals**	*Students will be able to:* • *Recognize that germs can make a person sick and that bacteria and viruses are germs.* • *Describe the various ways germs can be passed from person to person.* • *Recognize that bacteria and viruses are microscopic in size and that they cannot be seen with the naked eye.* • *Identify behaviors that promote good health.*

	cost. ● 3-5-ETS1-2 Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem. ● 3-5-ETS1-3 Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved ● CCSS.ELA-LITERACY.RI.5.3 Explain the relationships or interactions between two or more individuals, events, ideas, or		● *Maintain a notebook to document work.* ● *Share findings and conclusions with others.* ● *Organize and analyze medical data to determine the likely source of an infection.* ● *Demonstrate the spread of infection using a graphical organizer/flow chart and justify connections between infected individuals.* ● *Follow a step by step method to solve a problem.*

	concepts in a historical, scientific, or technical text based on specific information in the text. ● CCSS.ELA-LITERACY.RI.5.7 Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently. ● CCSS.ELA-LITERACY.RI.5.9 Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably. ● CCSS.ELA-LITERACY.SL.5.1 Engage		

	effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 5 topics and texts, building on others' ideas and expressing their own clearly.		

Essential Questions	1. *How can germs spread from person to person?* *7. How does the body defend itself from infectious disease?* *8. How can medical professionals use patient symptoms to diagnose illness?* *9. How can scientists determine how a germ spreads through a group of people?* *10. Why is it necessary to determine a disease spreading in an environment?*		
Assessments *How will we know they have gained the knowledge & skills?*	**Formative**	**Summative**	**Alternative**
	● Launch log ● Questioning ● Observation ● Rough draft of patient 0 ● Evidence documents	● Flow chart of patient 0	

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● Watch the Hunt for Patient 0
● Brainstorm information that would be helpful to determine patient 0
● Use evidence documents to create a flowchart of patient 0
● Collaborate with other groups to determine final decision
● Create a rough draft of flowchart and be approved by teacher
● Create final flow chart on google drawings
● Share final flow charts
● Complete check for understanding questions</td></tr>
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● Clarify test directions
● Preview test procedures
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● Allow for limited visuals on flowchart
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● Allow redos/retakes
● Read aloud test as needed
● Clarify test directions
● Preview test procedures
● Flexible grouping</td><td>● Google Classroom enrichment activities
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● Create a more detailed flow chart or a second flowchart that show multiple possible patient 0s</td></tr>
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	ng ● Videos: The Hunt of Patient 0 https://www.youtube.com/watch?v=iwfGyRU724w