

What Curriculum is Addressed		
Know	Content	<p>1. Basic functions of the immune system -the immune system provides a barrier to infections - different populations have greater immunity to certain infections than others</p> <p>2. Vaccination - vaccination can prevent the spread of infectious disease</p> <p>3. Antibiotics - antibiotics are effective only against living organisms, such as bacteria, and not against viruses</p> <p>4. Impacts of epidemics and pandemics on human populations</p>
Understand	Big Ideas	<p>Life processes are performed at the cellular level - a lack of understanding is creating “vaccine hesitancy” which is putting people at risk of illness -</p>
Why?	Purpose	<p>In BC this year alone, an outbreak has resulted in 21 confirmed cases of measles (BC Centre for Disease Control, 2019). If this continues people could see devastating consequences of an outbreak of a disease that should have been irradiated due to vaccines.</p>
Do	Core and Curricular Competencies	<p style="text-align: center;">Core Competencies</p> <p>Communication - Connect and engage with others - Acquire, interpret, and present information - Collaborate to plan, carry out, and review activities - recount and reflect on experiences and accomplishments</p> <p>Critical Thinking - Analyze and critique - Question and investigate</p> <p>Creative Thinking - Generating and developing ideas</p> <p>Social Responsibility - Contributing to community and caring for the environment</p>

		<p style="text-align: center;">Curricular Competencies</p> <p>Questioning and predicting</p> <ul style="list-style-type: none"> - Identify a question to answer or a problem to solve through scientific inquiry <p>Processing and analyzing data and information</p> <ul style="list-style-type: none"> - Construct and use a range of methods to represent patterns or relationships in data, including tables, graphs, keys, models, and digital technologies as appropriate - Seek patterns and connections in data from their own investigations and secondary sources <p>Evaluating</p> <ul style="list-style-type: none"> - Consider social, ethical, and environmental implications of the findings from their own and others' investigations <p>Applying and Innovating</p> <ul style="list-style-type: none"> - Contribute to care for self, others, community, and world through personal or collaborative approaches - Cooperatively design projects - Transfer and apply learning to new situations
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How Student Progress will be Monitored		
Inquiry Questions:		
<p>Factual</p> <ul style="list-style-type: none"> - is there evidence to suggest that vaccines are harmful? 	<p>Conceptual</p> <ul style="list-style-type: none"> - How do vaccines relate to the human immune system? - How has the development of vaccines related to the occurrence of pandemics and epidemics? - Why doesn't evidence always change behaviour? 	<p>Debatable</p> <ul style="list-style-type: none"> - Should the government make vaccines mandatory?

GRASPS Model:

<p>G – (real world goal)</p>	<p>In April 2019, Toronto's Medical Officer of Health, Dr. Eileen de Villa, will advise the board of health to ask Health Canada and the World Health Organization (WHO) to find ways to combat what's known as "vaccine hesitancy" in Canada.</p> <p>Your job will be to create a public service announcement (TV and YouTube advertisement) to combat “vaccine hesitancy”</p>
<p>R - (real-world role)</p>	<p>You work for an advertising agency</p>
<p>A - (real-world audience)</p>	<p>Canadian families</p>
<p>S – (real-world situation)</p>	<p>In Canada, about 20 per cent of parents are vaccine hesitant. In British Columbia, an outbreak has resulted in 21 confirmed cases of measles, according to the BC Centre for Disease Control.</p>
<p>P - (real-world products)</p>	<p>Research Summary:</p> <ul style="list-style-type: none"> - summarize your findings of the evidence as to whether or not vaccines are harmful for people and how your advertisement will combat “vaccine hesitancy” <p>TV Advertisement:</p> <ul style="list-style-type: none"> - create a TV/YouTube advertisement to combat “vaccine hesitancy” <p>Presentation:</p> <ul style="list-style-type: none"> - Present your advertisement to the class
<p>S – (standards for success)</p>	<p>Rubric</p>

Formative Assessments:

Lesson #	Lesson Overview and Formative Assessments
1	<ul style="list-style-type: none"> - Functions of the immune system <ul style="list-style-type: none"> o Students be the teachers of an organ of the immune system - different populations have greater immunity to certain infections than other populations <ul style="list-style-type: none"> o e.g., impact of smallpox epidemic on First Peoples
2	<ul style="list-style-type: none"> - What are antibiotics and how do they work? <ul style="list-style-type: none"> o M&M's vs Marshmallows activity
3	<ul style="list-style-type: none"> - What are vaccines and how do they work? <ul style="list-style-type: none"> o Guest Speaker
4	<ul style="list-style-type: none"> - Read CBC News article "Toronto needs help to combat 'false information' about vaccines, public health officials say" https://www.cbc.ca/news/canada/toronto/toronto-needs-help-to-combat-false-information-about-vaccines-public-health-officials-say-1.5080686 - Introduce the project and form groups
5	<ul style="list-style-type: none"> - Research day: Is there any evidence vaccines are harmful?
6	<ul style="list-style-type: none"> - Timeline: Global pandemics vs Development of key vaccines
7	<ul style="list-style-type: none"> - Research day: Why doesn't evidence always change behavior?
8	<ul style="list-style-type: none"> - Research summary due
9	<ul style="list-style-type: none"> - Should the government make vaccines mandatory? <ul style="list-style-type: none"> o Socratic circle - Begin to create advertisement- show examples of informative advertisements
10	<ul style="list-style-type: none"> - Work period (advertisement)
11	<ul style="list-style-type: none"> - Work period (advertisement)
12	<ul style="list-style-type: none"> - Presentations
13	<ul style="list-style-type: none"> - Finish presentations - Core Competencies assessment

Extensions and Connections to the Unit

Cross Curricular Connections	Community Connections	First Peoples Connections
<p>Social Studies 8:</p> <ul style="list-style-type: none"> - changes in population and living standards (including diseases and health) <p>Math 8:</p> <ul style="list-style-type: none"> - discrete linear relations <p>Physical and Health Ed 8:</p> <ul style="list-style-type: none"> - potential short-term and long-term consequences of health decisions - sources of health information 	<p>Guest Speaker from Royal Inland Hospital or TRU</p> <p>Guest speaker from advertising firm in Kamloops</p>	<p>Impact of smallpox epidemic on First Peoples</p> <p>First Peoples Principles of Learning</p> <ul style="list-style-type: none"> - learning ultimately supports the well-being of self, family, community - learning is holistic and experiential - learning involves recognising the consequences of one's actions

Methods of Differentiating Instruction/ Universal Design for Learning

Content:

- different levels of Bloom's Taxonomy (remembering, understanding, applying, analyzing, evaluating, and creating) are covered in lessons
- content is presenting using multiple methods (PowerPoint, guided notes, graphic organizers, videos, and interactive use of technology)
- content of PSA is flexible

Product:

- Research summary can be presented in different ways to support different learning types (e.g read and write learners write, visual learners create a graphic organizer, auditory learners give an oral report, kinesthetic learners build models)
- students can choose the content of their PSA

Process:

- Provide textbooks, audio books, Chromebooks, tablets for researching
- plenty of hands-on activities are provided

Learning Environment:

- behaviour code of conduct is followed
- students self-assess their work ethic and core competencies
- environment is safe
- quiet area designated on research days

Resources

Guest Speakers (Scientists and Innovators in Schools) <https://www.scienceworld.ca/sis>

First People's Principles of Learning: <https://curriculum.gov.bc.ca/instructional-samples/first-peoples-principles-learning>

Reflections

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