Global Sustainable Solutions 12

At-a-Glance

PILOT

NOVA SCOTIA
NOUVELLE-ÉCOSSE

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Global Sustainable Solutions 12: At-A-Glance PILOT

Prepared by the Department of Education and Early Childhood Development

This is the most recent version of the current curriculum materials as used by teachers in Nova Scotia.

Learners will evaluate the impacts of sense of place on decision-making.

Sense of Place

Rationale

Places are locations that have distinctive physical and human features that contribute to their specific character compared to other locations; place is a human construct. Sense of place refers to the emotional relationships that people develop with particular locations and environments. It relates to a range of scales from home to community to nation. Learners will consider how sense of place is influenced by positive or negative emotional bonds and varies between people. Learners begin by examining their experiences, perspectives, and emotions that contribute to their unique sense of place. Through exploration of their own and others' worldviews, including Mi'kmaw ways of knowing and being, learners begin to inquire into how sense of place influences data collection and use, and decision-making practices in local and global contexts.

Competencies

- Citizenship (CZ)
- Communication (COM)
- Critical Thinking (CT)
- Technological Fluency (TF)

Indicators

- **Question** how our lived experiences contribute to our emotional responses to various places (CZ, COM, CT)
- **Investigate** how Netukulimk informs decision-making practices (COM, CT)
- **Analyse** how perspectives inform data collection and use (CZ, CT, TF)
- **Compare** the influence of sense of place on decision-making in local and global contexts (CZ, COM, CT)

Concepts (and Guiding Questions)

Lived Experiences

- How do physical features make me feel about various places?
- How do human features and human characteristics influence my sense of place?
- How do my identities, communities, and experiences contribute to positive or negative responses to particular places?
- How do space and scale (home, community, nation) influence how I feel?

Netukulimk

- Why does sense of place differ among people?
- Why is it important to consider Indigenous worldviews when making decisions?
- How can the Mi'kmaw concept of Wejisqalia'ti'k inform decision-making?
- How do the core values of Netukulimk (Relationship, Responsibility, Reciprocity, and Respect) support decision-making practices?
- What is the relationship between Netukulimk and Mi'kmaw sense of place, emergence, and participation?
- How does understanding Mi'kmaw sense of place, emergence, and participation inform my decisions?

Data Collection and Use

- What kinds of data can be collected to support place-based decision making?
- Why is it important to consider how data is collected and used?
- How can the way data is collected or manipulated lead to disagreement?
- Why is it important to gather data from all affected communities before making a decision?
- How can data be used to inform decisions to represent and respect various communities' sense of place?

Learners will evaluate the impacts of sense of place on decision-making. (cont.)

Sense of Place and Decision-Making

- How do geographical stereotypes influence decisions?
- What factors need to be considered in place-based decision making?
- How can power and privilege lead to inequities in place-based decisions?
- What strategies can be used to ensure that place-based decisions are equitable?

Skills

Evaluate

Review processes and results from an inquiry. Critically examine and communicate varying perspectives and alternative solutions or findings. Identify potential new problems and/or issues. Justify decisions and/or findings.

Question

Independently and collaboratively generate questions in response to increasingly complex problems and/or issues. Choose and develop a specific question to investigate.

Investigate

Ask and revise questions; locate several relevant and dependable details to support an answer; organize and compare details; identify relationships, recognize represented perspectives, and communicate findings.

Analyse

Gather and select appropriate information; determine accuracy, validity, and relevance of the information; consider the implications of the information from multiple perspectives; communicate findings.

Compare

Make observations; identify similarities and differences; identify relationships and offer an interpretation; communicate the findings.

Learners will reflect on the relationships Indigenous peoples have with their lands and territories.

Sense of Place

Rationale

"Indigenous" is increasingly used in Canadian, international, and academic settings, and refers to people who are indigenous to the land. The term has found favor among Indigenous people, organizations, and governments who are reclaiming their traditions and tying their own identities more closely to their traditional territories. The United Nations estimates that there are more than 370 million indigenous people spread across six continents and 70 countries worldwide. Indigenous peoples have unique knowledge systems, languages, and traditions. Their relationships with ancestral lands and territories are essential to their physical, mental, emotional, social, and spiritual health. Indigenous peoples have rich, diverse concepts of land development, management, and stewardship. For many, land includes the earth, air, water, and all living and nonliving beings within these ecosystems. Learners will explore the relationships local and global Indigenous communities have with the land and how they continue to advocate to protect those relationships. Learners consider how Indigenous peoples have, and continue to, advocate for the conservation and protection of their lands and territories to promote the health of communities and ecosystems.

Competencies

- Citizenship (CZ)
- Communication (COM)
- Critical Thinking (CT)
- Personal and Career Development (PCD)
- Technological Fluency (TF)

Indicators

- **Compare** various Indigenous peoples' relationships with land (COM, CT, PCD)
- **Investigate** the effects of colonial government decisions on Indigenous territories (CZ, COM)
- **Investigate** how Indigenous peoples are working to conserve and protect the land and environment (CZ, PCD, TF)
- **Analyse** the responsibilities of governments to implement protection and conservation programs (COM, CZ, PCD)

Concepts (and Guiding Questions)

Relationships with Land

- How do relationships with land vary among Indigenous peoples?
- Why is it important that Indigenous peoples are able to maintain, reclaim, and strengthen their spiritual relationships with their lands and territories?
- How does responsibility to future generations affect interactions with land?
- How does the relationship with land affect dimensions of health for Indigenous peoples?

Effects of Colonization

- How did colonization change geopolitical boundaries for Indigenous peoples?
- How were traditional relationships with land impacted by colonialism?
- How can maps be tools for colonization and decolonization?
- How has geographic and social isolation caused by colonization affected Indigenous peoples?
- How have government decisions contributed to environmental justice issues that continue to affect Indigenous peoples?

Learners will reflect on the relationships Indigenous peoples have with their lands and territories. (cont.)

Conservation and Protection

- How do Indigenous worldviews and knowledge systems inform how Indigenous peoples interact with the land?
- How do Indigenous peoples monitor, maintain, and restore the health of their communities?
- How do Indigenous peoples conserve and protect their lands, territories, and resources?
- How do Indigenous conservation and protection strategies support the productive capacity of land?
- How can governments support programs to assist in Indigenous peoples' conservation and protection efforts?

Responsibilities of Governments

- How does the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) support the development and implementation of conservation and protection programs with Indigenous peoples?
- Why is it important to consult with Indigenous peoples when developing programs to conserve and protect Indigenous lands and territories?
- What role does free, prior, and informed consent play in conserving and protecting Indigenous lands, territories, and resources?
- How can nations develop programs to monitor, maintain, and restore health of Indigenous peoples affected by environmental justice issues?
- How do Indigenous communities advocate for the conservation and protection of their lands and territories when their rights have been ignored?

Skills

Reflect

Ask questions of experiences and/or concepts; Examine further ideas and information; consider ideas, perceptions, and perspectives about experiences and/or concepts; Evaluate perceptions and perspectives in relation to experiences and/or concepts; Synthesize perceptions, and perspectives in relation to experiences and/or concepts; Communicate the impact of the process.

Compare

Make observations; identify similarities and differences; identify relationships and offer an interpretation; communicate the findings.

Investigate

Ask and revise questions; locate several relevant and dependable details to support an answer; organize and compare details; identify relationships, recognize represented perspectives, and communicate findings.

Analyse

Gather and select appropriate information; determine accuracy, validity, and relevance of the information; consider the implications of the information from multiple perspectives; communicate findings.

Learners will _{analyse} strategies used to ensure access to clean drinking water and sanitation.

Security and Sustainability

Rationale

Significant progress has been made in increasing access to clean drinking water and sanitation in many parts of the world; however, billions of people, mostly in rural areas, still lack access to clean drinking water and sanitation. This outcome provides learners with opportunities to consider the causes of water scarcity, the relationship between sanitation and health, and to analyse the role of various stakeholders in developing water management strategies that can ensure access to clean drinking water and sanitation for all. Learners will understand that access to water, sanitation, and hygiene is a human right; and analyse how access is essential for health including disease control, poverty reduction, food security, sustainable ecosystems, and education. Learners will examine strategies to create access to clean drinking water and sanitation, and to mitigate the effects of lack of access on local and global communities.

Competencies

- Citizenship (CZ)
- Communication (COM)
- Creativity and Innovation (CI)
- Critical Thinking (CT)
- Personal and Career Development (PCD)
- Technological Fluency (TF)

Indicators

- **Investigate** the causes of physical and economic water scarcity (CZ, CT, PCD)
- **Analyse** the relationship between sanitation and health (CZ, CT, PCD)
- **Compare** water management strategies (CZ, CT, PCD)
- **Question** ways to provide equitable access to sanitation (CZ, COM, CI, PCD, TF)
- **Compare** the influences of various stakeholders in relation to water management and sanitation issues (CZ, COM, TF)

Concepts (and Guiding Questions)

Water Scarcity

- How does increased human demand and overuse of water contribute to water scarcity?
- How do the effects of climate change, such as altered weather patterns and climate migration, contribute to water scarcity?
- How does increased eutrophication and salinization contribute to water scarcity?
- How is poor water management related to water scarcity?

Sanitation and Health

- How can the effects of inadequate sanitation on health be measured?
- How does inadequate sanitation perpetuate cycles of poverty and disease?
- How does inadequate access to water, sanitation, and hygiene impact children?
- How can improved sanitation lead to health benefits?
- How does improved sanitation promote gender equality and empowerment for women and girls?

Water Management

- How can communities develop effective water management strategies?
- How do various water conservation and water efficiency strategies reduce water use?
- What role does water protection play in water management?
- How do spatial and temporal distributions of freshwater resources impact water management strategies in selected communities?
- How can Indigenous water management strategies promote sustainable water services?

Learners will _{analyse} strategies used to ensure access to clean drinking water and sanitation. (cont.)

Access to Sanitation

- What are the challenges associated with providing access to adequate sanitation?
- How can effective management of services provide greater access to sanitation?
- How have Indigenous communities advocated for equitable access to sanitation services?
- How can improved infrastructure increase access to sanitation?
- How can international human rights laws provide support for vulnerable populations seeking access to adequate sanitation?
- How can funding gaps to achieve sanitation targets be addressed?

Influence of Stakeholders

- How does discrimination affect decision-making practices related to water management and sanitation?
- Why is it important to include women, youth, and Indigenous communities in water resources governance?
- What role do governments play in providing access water security and access to adequate sanitation?
- How can international organizations encourage countries to provide clean water and adequate sanitation for Indigenous and other communities?
- How do businesses and industries influence water management and sanitation issues?

Skills

Analyse

Gather and select appropriate information; determine accuracy, validity, and relevance of the information; consider the implications of the information from multiple perspectives; communicate findings.

Investigate

Ask and revise questions; locate several relevant and dependable details to support an answer; organize and compare details; identify relationships, recognize represented perspectives, and communicate findings.

Compare

Make observations; identify similarities and differences; identify relationships and offer an interpretation; communicate the findings.

Question

Independently and collaboratively generate questions in response to increasingly complex problems and/or issues. Choose and develop a specific question to investigate.

Learners will evaluate solutions for achieving food security and improved nutrition.

Security and Sustainability

Rationale

The number of people who suffer from hunger worldwide is slowly increasing. The effects of armed conflicts, global climate change, economic downturns, and the COVID-19 pandemic have the potential to put hundreds of millions of people at risk of suffering acute hunger. The global nutrition transition is shifting health implications for millions of people worldwide. Learners will examine how food security and improved nutrition can support positive changes in health for people across the globe. They will inquire into how changes to the global food, agriculture, and fisheries systems can provide sustainable solutions to end global hunger while protecting the environment. This outcome provides learners with opportunities to consider barriers to providing food security and improved nutrition for all and to explore the roles of various stakeholders in taking action to overcome these challenges.

Competencies

- Citizenship (CZ)
- Communication (COM)
- Creativity and Innovation (CI)
- Critical Thinking (CT)
- Personal and Career Development (PCD)
- Technological Fluency (TF)

Indicators

- **Compare** ways of measuring the impacts of food insecurity on health outcomes (CZ, CT, PCD)
- **Investigate** changing global patterns in health indicators (CZ, CT, PCD)
- **Analyse** impacts of nutrition transition in local and global food systems (CZ, COM, CT)
- **Investigate** the impacts of physical processes and human activity on food production and security (CZ, CI, CT, TF)
- **Evaluate** the influence of various stakeholders on strategies to provide food security and improved nutrition (CZ, CT, PCD, TF)

Concepts (and Guiding Questions)

Food Insecurity and Health Outcomes

- How is access to food measured?
- How is nutrient intake affected by food insecurity?
- What factors contribute to disparities in access to food?
- How are health outcomes affected by food insecurity?

Changing Health Indicators

- How can direct and indirect measures of health indicators suggest changes in global patterns?
- What do changing health indicators reveal about contemporary patterns of disease and their determinants?
- How are demographic and socioeconomic factors related to health?
- Why is considering disaggregated health data important when considering health inequities?

Learners will *evaluate* solutions for achieving food security and improved nutrition. (cont.)

Nutrition Transitions

- How do regional variations in food consumption and nutrition choices affect food systems?
- How are shifts in dietary consumption influenced by economic development and urbanization?
- How does nutrition transition impact local and global environments?
- Why are people in developing countries disproportionately impacted by the negative effects of nutrition transition?

Food Production and Security

- How do natural factors influence food production?
- How is food production being affected by climate change?
- How can agriculture and fisheries systems adapt to support sustainable food production?
- How do socioeconomic factors (organization of land and labour, government policies, armed conflict, trade) influence food production and security?
- How can changes to agricultural production techniques increase sustainable food production and promote food security?

Stakeholders and Strategies

- How do transnational corporations, including agribusiness and media, shape food consumption habits?
- Why is it important to consult with communities affected by food insecurity?
- How do individuals, organizations, and communities take action to support food security and improved nutrition?
- How can government policies address challenges to sustainable food production and food security?
- How are innovations in agriculture, digital technologies, and transport affecting food security and improved nutrition?

Skills

Evaluate

Review processes and results from an inquiry. Critically examine and communicate varying perspectives and alternative solutions or findings. Identify potential new problems and/or issues. Justify decisions and/or findings.

Compare

Make observations; identify similarities and differences; identify relationships and offer an interpretation; communicate the findings.

Investigate

Ask and revise questions; locate several relevant and dependable details to support an answer; organize and compare details; identify relationships, recognize represented perspectives, and communicate findings.

Analyse

Gather and select appropriate information; determine accuracy, validity, and relevance of the information; consider the implications of the information from multiple perspectives; communicate findings.

Learners will formulate a response to mitigate the impacts of disasters on the availability of resources.

Security and Sustainability

Rationale

Natural and human-made disasters impact millions of people worldwide every year. Disasters and their effects can put severe strain on vital natural and human resources and the effects of global climate change are intensifying the impacts of some disasters. In this outcome, learners explore how current pressures on resources influence communities' resilience before a disaster strikes. Learners will inquire into the impacts of disasters on resource availability in selected locations and compare disaster management strategies as they develop their own responses to mitigate the impacts of disasters on resource availability. As they formulate responses, learners consider how the four main phases of disaster management: mitigation, preparedness, response, and recovery take into account the physical and human characteristics of a location in order to reduce the environmental and humanitarian impacts caused by disasters. Learners will consider how vulnerable communities are often disproportionately affected by the impacts of disasters.

Competencies

- Citizenship (CZ)
- Communication (COM)
- Creativity and Innovation (CI)
- Critical Thinking (CT)
- Personal Career Development (PCD)
- Technological Fluency (TF)

Indicators

- **Question** how pressure on resources affects quality of life for individuals and communities (CZ, COM, CT, PCD)
- **Investigate** how geographical location and place affect hazard intensity (CZ, CT)
- **Analyse** the relationship between global climate change and availability of resources (CZ, CT, TF)
- **Compare** disaster management strategies (CZ, CI, CT, TF)

Concepts (and Guiding Questions)

Resources and Quality of Life

- How does access to resources affect quality of life?
- What role do beliefs about scarcity and sustainability play in the production and availability of resources?
- How are competing concerns about food, water, and energy security influencing international relations?
- How do international emergencies impact the production and availability of resources?

Hazard Intensity

- How do geographical location and place influence the spatial distribution of exposure to hazards?
- How can geographical environments contribute to multi-hazards and disaster chains?
- How do physical and human characteristics of selected places influence hazard intensity?
- Why does hazard intensity vary by place?

Global Climate Change and Resources

- How might climate change impact production patterns?
- How can climate change mapping be used to determine the impact on a community's access to resources?
- How can climate migration put pressure on available resources?
- How can international agreements mitigate the impacts of global climate change on the availability of resources?

Learners will formulate a response to mitigate the impacts of disasters on the availability of resources. (cont.)

Disaster Management Strategies

- Why do responses to disasters differ?
- Why are community-based programs important in responding to disasters?
- How can management strategies be used to prevent, prepare for, respond to, or recover from disasters?
- How can remote sensing and other spatial technologies be used to support disaster management plans?
- How can disaster management help to support access to key resources for affected populations?

Skills

Formulate

Identify a topic of interest; brainstorm ideas; choose, prioritize, and refine ideas; evaluate choices.

Question

Independently and collaboratively generate questions in response to increasingly complex problems and/or issues. Choose and develop a specific question to investigate.

Investigate

Ask and revise questions; locate several relevant and dependable details to support an answer; organize and compare details; identify relationships, recognize represented perspectives, and communicate findings.

Analyse

Gather and select appropriate information; determine accuracy, validity, and relevance of the information; consider the implications of the information from multiple perspectives; communicate findings.

Compare

Make observations; identify similarities and differences; identify relationships and offer an interpretation; communicate the findings.

Learners will create a proposal to promote sustainable population growth.

Sustainable Populations

Rationale

The world's population is expected to increase to almost 10 billion by 2050. Dramatic global population growth has been accompanied by significant changes to global life expectancy, fertility rates, increasing urbanization, and accelerating migration rates. Global population growth presents significant challenges for achieving a better and more sustainable future for humans and the planet. In this outcome, learners have the opportunity to examine current population trends and explore positive, empowering solutions that provide pathways to sustainable population growth. Through exploration of population planning strategies that empower women and girls, policy measures to reduce the number of newborn maternal deaths, initiatives to provide quality education for all, and strategies to reduce consumption to sustainable levels, learners can develop proposals to support sustainable population growth. Teachers should note that historically, some methods of population planning caused significant individual and community harm. Learners should explore solutions that respect and protect human rights.

Competencies

- Citizenship (CZ)
- Communication (COM)
- Critical Thinking (CT)
- Personal Career Development (PCD)
- Technological Fluency (TF)

Indicators

- **Question** why population varies between places (CZ, CT)
- **Investigate** the factors that influence sustainable population growth (CZ, COM, CT)
- **Compare** the effects of changing population dynamics on communities (CZ, CT, PCD)
- **Investigate** the relationship between gender equality and sustainable population growth (CZ, COM, CT, PCD)
- **Analyse** strategies to promote sustainable population growth (CZ, COM, CT, TF)

Concepts (and Guiding Questions)

Population

- How is population distribution influenced by physical factors?
- How do physical and human factors influence population density?
- How are population changes related to economic development and decline?
- Why do population structures vary between places?
- How is the world's demography changing?

Sustainable Population Growth

- How do physical and human factors influence population growth?
- Why is it challenging to calculate carrying capacity for humans?
- How do changes in the global fertility rate impact population projections?
- How is global life expectancy related to population growth?
- How do shifts in global consumption rates influence the sustainability of human populations?

Learners will create a proposal to promote sustainable population growth. (cont.)

Changing Population Dynamics

- How can demographic transition be measured?
- How do population changes create opportunities and challenges for communities?
- How are growing populations impacting the environment?
- How do the impacts of population growth, aging, and decline differ?

Gender Equality and Population

- How do inequalities for women and girls impact global fertility rates?
- How does access to education for women and girls support sustainable population growth?
- Why is it important to include women in policy-making processes to advance women's status and child health?
- How does universal access to reproductive health and voluntary family planning services affect population growth?
- How does providing equitable access to employment and pay for women and girls impact fertility rates?

Strategies for Sustainable Growth

- How can reducing global consumption rates influence sustainable population growth?
- How can technological innovations support sustainable consumption?
- How can human rights-based and gender-responsive demographic policies support sustainable population growth?
- What is the relationship between sexual and reproductive health, poverty reduction, and sustainable population growth?
- How can international cooperation promote sustainable population growth?

Skills

Create

develop an idea; communicate a representation for a process and/or a product; produce a product; modify as necessary; evaluate results and/or modifications.

Question

Independently and collaboratively generate questions in response to increasingly complex problems and/or issues. Choose and develop a specific question to investigate.

Investigate

Ask and revise questions; locate several relevant and dependable details to support an answer; organize and compare details; identify relationships, recognize represented perspectives, and communicate findings.

Compare

Make observations; identify similarities and differences; identify relationships and offer an interpretation; communicate the findings.

Analyse

Gather and select appropriate information; determine accuracy, validity, and relevance of the information; consider the implications of the information from multiple perspectives; communicate findings.

Learners will create a response to raise awareness about the effects of forced migration on migrants and communities

Sustainable Populations

Rationale

Forced or involuntary migration, including internal displacement, is often the result of conflicts or disasters. Both conflict-induced and disaster-induced migrations can result from sudden- or slow-onset events. People forced to migrate due to limited access to clean water, food, scarcity, agricultural degradation, or violent conflict are often left vulnerable with limited autonomy. Through this outcome, learners will compare the causes of forced migration and investigate the effects of global climate change on migration patterns. Learners will inquire into the effects of forced migrations for sending and receiving populations and evaluate the effects of forced migration on migrants such as refugees and asylum-seekers, displaced persons, and victims of human trafficking. As learners create responses about the effects of forced migration, they can consider how story maps, thematic maps, or other communication forms can be used to raise awareness about the effects of forced migration.

Competencies

- Citizenship (CZ)
- Communication (COM)
- Creativity and Innovation (CI)
- Critical Thinking (CT)
- Personal Career Development (PCD)
- Technological Fluency (TF)

Indicators

- Compare the causes of conflict-induced and disaster-induced migration and displacement (CZ, COM, CT)
- Investigate the effects of global climate change on migration patterns (CZ, COM, CT, TF)
- Analyse the effects of forced migration on receiving and sending populations (CZ, COM, CT, TF)
- Evaluate the effects of forced migration on migrant populations (CZ, COM, CT, PCD)

Concepts (and Guiding Questions)

Causes of Forced Migration

- How are migration trends changing?
- How do the causes of conflict- and disaster-induced migration differ?
- Why do international protections for asylum seekers, refugees, migrants, and internally displaced people differ?
- Why do people living in developing countries experience greater incidences of forced migration and internal displacement?

Effects of Global Climate Change

- Why is it challenging to quantify environmental migration?
- How could climate change influence migration?
- How is environmental migration changing population densities and distributions?
- How are climate and environmental changes driving relocation of communities?
- How can data be used to assess different forms of migration to inform adaptation strategies related to environmental and climate change?

Learners will _{create} a response to raise awareness about the effects of forced migration on migrants and communities (cont.)

Effects on Communities

- What are the economic effects of outmigration on sending populations?
- How do refugees affect the societal and political landscape of the host country?
- How does the media influence perceptions of the impacts of forced migration and internal displacement for receiving and sending populations?
- How do government policies and interventions mitigate or adapt to challenges created by forced migrations?

Effects on Migrants

- How does forced migration affect dimensions of health for migrants?
- How do forced migrants and internally displaced people respond to the effects of migration?
- What social and economic challenges do migrants face in host countries?
- How can host communities support forced migrants and internally displaced people?
- How do governments and international organizations act to respond to the effects of forced migration on migrant populations?

Skills

Create

Develop an idea; communicate a representation for a process and/or a product; produce a product; modify as necessary; evaluate results and/or modifications.

Compare

Make observations; identify similarities and differences; identify relationships and offer an interpretation; communicate the findings.

Investigate

Ask and revise questions; locate several relevant and dependable details to support an answer; organize and compare details; identify relationships, recognize represented perspectives, and communicate findings.

Analyse

Gather and select appropriate information; determine accuracy, validity, and relevance of the information; consider the implications of the information from multiple perspectives; communicate findings.

Evaluate

Review processes and results from an inquiry. Critically examine and communicate varying perspectives and alternative solutions or findings. Identify potential new problems and/or issues. Justify decisions and/or findings.

Learners will evaluate the impacts of urban environmental and social stresses on the liveability of urban environments.

Sustainable Communities

Rationale

The global urban population outnumbers the rural population, and by 2050, it is predicted that two-thirds of the world population will be living in urban areas. Cities are centers of social, human, and economic development but living in cities also produces stresses unique to urban environments. As the number of people moving to urban areas grows locally and globally, opportunities and challenges continue to emerge that affect the livability of urban environments. To create livable cities, communities must meet the needs of their current inhabitants and ensure that they are sustainable for the future. Learners will consider the impacts of urbanization and how economic changes, access to health care and education, access to safe drinking water, waste management, transportation systems, and changes to infrastructure can all affect the livability of urban environments. Learners will inquire into the effects of the growing footprint of urban areas and the relationship between changing urban environments and socio-demographics, health, and environmental change.

Competencies

- Citizenship (CZ)
- Communication (COM)
- Critical Thinking (CT)
- Personal and Career Development (PCD)
- Technological Fluency (TF)

Indicators

- **Question** the liveability of cities in local and global regions (CZ, CT, PCD, TF)
- **Investigate** factors that influence urban development (CZ, COM, CT)
- **Investigate** the effects of population changes on the built environment of cities (CT, TF)
- **Compare** land-use patterns in cities in local and global regions (CZ, CT, PCD)
- **Analyse** how urban environmental and social stresses impact equity in communities (CZ, COM, CT, PCD)

Concepts (and Guiding Questions)

Liveability

- How can the liveability of selected cities be assessed?
- How do culture and value systems influence perspectives of what constitutes livability?
- How do various physical and human characteristics affect the livability of cities?
- How does infrastructure affect the liveability of a city?

Urban Development

- How do the physical characteristics of different sites encourage urban growth?
- How do social factors influence the characteristics of selected cities?
- How do political decisions impact the development of selected cities?
- How do threshold populations influence economic opportunities and needs?
- Why do people have varying perspectives on how cities should be developed?

Learners will evaluate the impacts of urban environmental and social stresses on the liveability of urban environments. (cont.)

Effects of Population Changes

- How is natural increase influencing urbanization in local and global regions?
- How are centripetal and centrifugal population movements contributing to the growth and decline of cities?
- How does rapid population growth affect the built environment of cities?
- How can built environments be adapted to respond to population aging and shrinking?

Land-Use Patterns

- How do land-use patterns contribute to environmental and social stresses?
- How do spatial distribution patterns vary in selected cities and regions?
- How does the dominant function of cities influence land-use patterns?
- How does land-use impact the livability of neighbourhoods?

Urban Stresses and Equity

- Why are some communities disproportionately affected by urban stresses?
- How do environmental stresses influence quality of life for urban populations?
- How can cities respond to inequities related to environmental and social stresses?

Skills

Evaluate

Review processes and results from an inquiry. Critically examine and communicate varying perspectives and alternative solutions or findings. Identify potential new problems and/or issues. Justify decisions and/or findings.

Question

Independently and collaboratively generate questions in response to increasingly complex problems and/or issues. Choose and develop a specific question to investigate.

Investigate

Ask and revise questions; locate several relevant and dependable details to support an answer; organize and compare details; identify relationships, recognize represented perspectives, and communicate findings.

Compare

Make observations; identify similarities and differences; identify relationships and offer an interpretation; communicate the findings.

Analyse

Gather and select appropriate information; determine accuracy, validity, and relevance of the information; consider the implications of the information from multiple perspectives; communicate findings.

Learners will formulate a design solution to support sustainable urban systems.

Sustainable Communities

Rationale

The number of urban residents is growing at a rate of almost 73 million each year, making the development of sustainable and resilient urban systems essential for global development efforts. Creating sustainable cities that are safe and inclusive for all requires learners to consider the converging nature of urban issues. Learners examine how the effects of global climate change present new challenges for urban planning and how sustainable and resilient urban design can support equity in urban systems. Through this outcome, learners have opportunities to develop design solutions that respond to a range of contemporary urban issues in ways that promote the effective management of sustainable systems.

Competencies

- Citizenship (CZ)
- Communication (COM)
- Creativity and Innovation (CI)
- Critical Thinking (CT)
- Personal and Career Development (PCD)
- Technological Fluency (TF)

Indicators

- **Investigate** the impacts of human activities on selected urban systems (CZ, COM, CT)
- **Compare** sustainable urban planning and design solutions to mitigate the impacts of human activities on urban systems (CI, CT, PCD, TF)
- **Analyse** the impacts of resilient urban planning on selected cities' abilities to respond or adapt to chronic stresses and acute shocks (CZ, CI, CT, TF)
- **Investigate** the ways planning and design can support equity in urban systems (CZ, COM, CT, PCD)
- **Evaluate** the influence of various stakeholders addressing urban sustainability and resilience (CZ, CI, CT, TF)

Concepts (and Guiding Questions)

Impacts of Human Activities

- How can the impacts of human activities on the natural and built environments be determined?
- How is large-scale migration impacting the natural and built environments in urban areas?
- How does a settlement's natural characteristics influence its options for reducing human impacts on the natural environment?
- How does community land use and infrastructure affect people and the natural environment?
- How do various transportation and energy supply options affect the sustainability of urban systems?

Sustainable Urban Planning and Design

- How can planning and design solutions account for changes in population sizes and structures?
- How can green technologies and green spaces help to reduce the impacts of human activities on selected cities?
- How are smart cities and communities using digital solutions to support sustainability practices?
- How do planning and design solutions vary based on geographic location and community needs?
- How can Indigenous community planning inform sustainable urban development?

Learners will formulate a design solution to support sustainable urban systems. (cont.)

Resilient Urban Planning

- Why do urban areas need to adopt adaptation measures to address the impacts of continuing climatic change?
- How do geopolitical risks pose challenges for resilience in urban areas?
- How does a city's geographic location influence its planning needs?
- How do populations modify their built and natural environments to make them more resilient to natural and human-made disasters?
- How can resilient urban planning support short-term coping and long-term adaptation measures?

Planning and Equity

- How do social and cultural factors influence urban planning and development?
- How does the spatial distribution of public services impact equity in urban areas?
- How can community consultations help to address biases in community planning?
- How does scale (e.g., urban region, neighborhood, site) impact design solutions?
- How can planning support social and economic stability in urban systems?

Sustainability and Resilience

- How do the roles and responsibilities of individuals, organizations, corporations, and governments differ in ensuring the sustainability of cities?
- How do regional concerns impact policy decisions?
- How can bottom-up community organization influence urban planning?
- How do the perceived and real needs of stakeholders impact decision-making practices?
- How can regional policy changes drive markets for green solutions?

Skills

Formulate

Identify a topic of interest; brainstorm ideas; choose, prioritize, and refine ideas; evaluate choices.

Investigate

Ask and revise questions; locate several relevant and dependable details to support an answer; organize and compare details; identify relationships, recognize represented perspectives, and communicate findings.

Compare

Make observations; identify similarities and differences; identify relationships and offer an interpretation; communicate the findings.

Analyse

Gather and select appropriate information; determine accuracy, validity, and relevance of the information; consider the implications of the information from multiple perspectives; communicate findings.

Evaluate

Review processes and results from an inquiry. Critically examine and communicate varying perspectives and alternative solutions or findings. Identify potential new problems and/or issues. Justify decisions and/or findings.