Fresh Roots Curriculum-Linked Field Classes Series

Welcome to the Fresh Roots Field Class Series!

The Fresh Roots field classes are intended to provide curriculum-linked experiential learning opportunities on the Fresh Roots school-yard farms. Incorporation of these classes into the classroom can help teachers to meet the **BC Prescribed Learning Outcomes and enhance the learning experience. All courses are based on the concept of "Investigation, Interpretation, and Communication;" allowing students to use their farm experience as a tool for reaching the content and curricular competencies.**

Food Security – Grades 10-12

Applicable Classes: Planning 12, Social Justice 12, Culinary Arts 10-12, Food Studies 10, 11,12, Environmental Science 12

This is a class intended for students in grades 11-12 investigating the concepts of food security, sustainability and local food systems etc. Barriers to food security are presented, solutions are a point of discussion. During discussion, we link the concepts surrounding local food with what we are doing on the Fresh Roots farms. Presentation/Discussion takes 45min – 1hour. Follow with a farm tour and/or farm work, depending on time available.

Big Idea: Social, ethical, and sustainability considerations impact design.

Curricular Competencies:

- Critical Thinking and Intellectual Development
- Personal and Social Competencies
- Social Responsibility
- Positive Personal and Cultural Identity
- Social, economic, and environmental effects of food procurement decisions
- Food products available locally from agriculture
- Food justice in the local and global community
- Simple and complex global food systems and how they affect food choices, including environmental, ethical, economical, and health impacts
- Social justice initiatives can transform individuals and systems.

Agroecosystems– Grade 9

Applicable Classes: Science 9

This class supports the learning objectives in the new Grade 9 Science Curriculum. Specifically, this field course will introduce the concept of an "Agroecosystem." Students will consider the differences and similarities between agroecosystems and natural ecosystems, how farm managers depend on matter cycles and energy flows to maintain productive, healthy and sustainable farms and how agriculture shapes the sources and sinks of these cycles.

Big Idea: The biosphere, geosphere, hydrosphere, and atmosphere are interconnected, as matter cycles and energy flows through them.

Content: Water, nitrogen, carbon, phosphorus cycles

Human impact on sources and sinks
Bioaccumulation and biomagnification
A systems approach to sustainability see all matter and energy as interconnected and existing in a dynamic equilibrium

Curricular Competencies:

- Make observations aimed at identifying their own questions, including increasingly complex ones, about the natural world
- Experience and interpret the local environment
- Analyze cause-and-effect relationships
- Consider the changes in knowledge over time as tools and technologies have developed
- Consider social, ethical, and environmental implications of the findings from their own and others' investigations
- Express and reflect on a variety of experiences, perspectives, and worldviews through **place**

The Living Dirt– Grade 8

Applicable Classes: Science 8

Did you know that the soil is one of the most diverse ecosystems on the planet and that one tablespoon of soil can contain a billion bacteria, several meters of fungi, several thousand protozoa and scores of nematodes? Most soil organisms are invisible to the naked eye but help grow food in many valuable ways. In this field-class students will explore the integral role microorganisms play on the farm in decomposition, pest control and nutrient and water cycling.

Big Idea: Life processes are performed at the cellular level

Content: The relationship of microorganisms with living things

Microorganisms are key to nutrient recycling in ecosystems as they act as decomposers

Curricular Competencies:

- Demonstrate a sustained intellectual curiosity about a scientific topic or problem of personal interest
- Make observations aimed at identifying their own questions about the natural world
- Identify a question to answer or a problem to solve through scientific inquiry
- Formulate alternative "If...then..." hypotheses based on their questions
- Observe, measure, and record data (qualitative and quantitative), using equipment, including digital technologies, with accuracy and precision
- Experience and interpret the local environment
- Use scientific understandings to identify relationships and draw conclusions
- Consider social, ethical, and environmental implications of the findings from their own and others' investigations
- Contribute to care for self, others, community, and world through personal or collaborative approaches
- Transfer and apply learning to new situations
- Express and reflect on a variety of experiences and perspectives of place

Reproduction on the Farm– Grade 8

Applicable Classes: Science 8

Plants are everywhere. They are some of the most abundant and diverse organisms on the planet. Explore the reproductive strategies plants have developed to become so successful and how they help and hinder food production. From pollination and seed dispersal to rhizomes and stolons. Students will observe the different plants on the farm, investigate how they reproduce and discuss how these strategies affect their evolutionary success.

Big Idea: Cells are derived from cells

Content: A sexual and sexual reproduction

Different forms of asexual reproduction fission, budding, spores, cloning, grafting.
Meiosis.

Curricular Competencies:

- Demonstrate a sustained intellectual curiosity about a scientific topic or problem of personal interest
- Make observations aimed at identifying their own questions about the natural world
- Identify a question to answer or a problem to solve through scientific inquiry
- Formulate alternative "If...then..." hypotheses based on their questions
- Observe, measure, and record data (qualitative and quantitative), using equipment, including digital technologies, with accuracy and precision

- Experience and interpret the local environment
- Use scientific understandings to identify relationships and draw conclusions
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Farm Work – Grades 8-10

Applicable Classes: Physical Health and Education 8-10, Active Living 11-12, Outdoor Education 11-12

Students explore how working outdoors, in the soil, growing food can be a physically challenging and emotionally rewarding experience. Discussions will cover how to prepare for outdoor work, how to use tools safely, the benefits of working with soil and plants (therapeutic horticulture, physical well-being, contributing to creating healthy communities).

Big Ideas

- Participation in outdoor activities allows for the development of skills in a complex and dynamic environment.
- Spending time outdoors allows us to develop an understanding of the natural environment.
- Participating safely in outdoor activities requires communication, teamwork, and collaboration.
- Finding enjoyable activities can motivate people to participate more regularly in physical activity

Curricular Competencies:

- benefits of physical activities to health and mental well-being
- physical activity safety and etiquette
- health benefits of outdoor activities
- outdoor activity skills in a variety of settings, including different weather conditions and physical environments

Other Classes Coming

The Farm Business

Applicable Classes: Entrepreneurship 11

Photosynthesis– Grade 8

Applicable Classes: Science 8

The Living Dirt– Grade 12

Applicable Classes: Environmental Science 12

Agroecosystems– Grade 11

Applicable Classes: Environmental Science 11

Agriculture and the Industrial Revolution– Grade 9

Applicable Classes: Social Studies 9

Agriculture and Urbanization - Grade 10-12

Applicable Classes: Environmental Science 11, Urban Studies 11-12, Social Justice 12

The Green Revolution of the 20th century - Grade 10-12

Applicable Classes: Environmental Science 11, 20th Century World History 11

Agriculture and Technology

Applicable Classes: Science and Technology 11

Poetry on the Farm– All grades

Applicable Classes: English Language Arts

Have a class in mind?

We would love to hear your ideas on how to incorporate your class into the farm. Share your idea and we will make it happen!