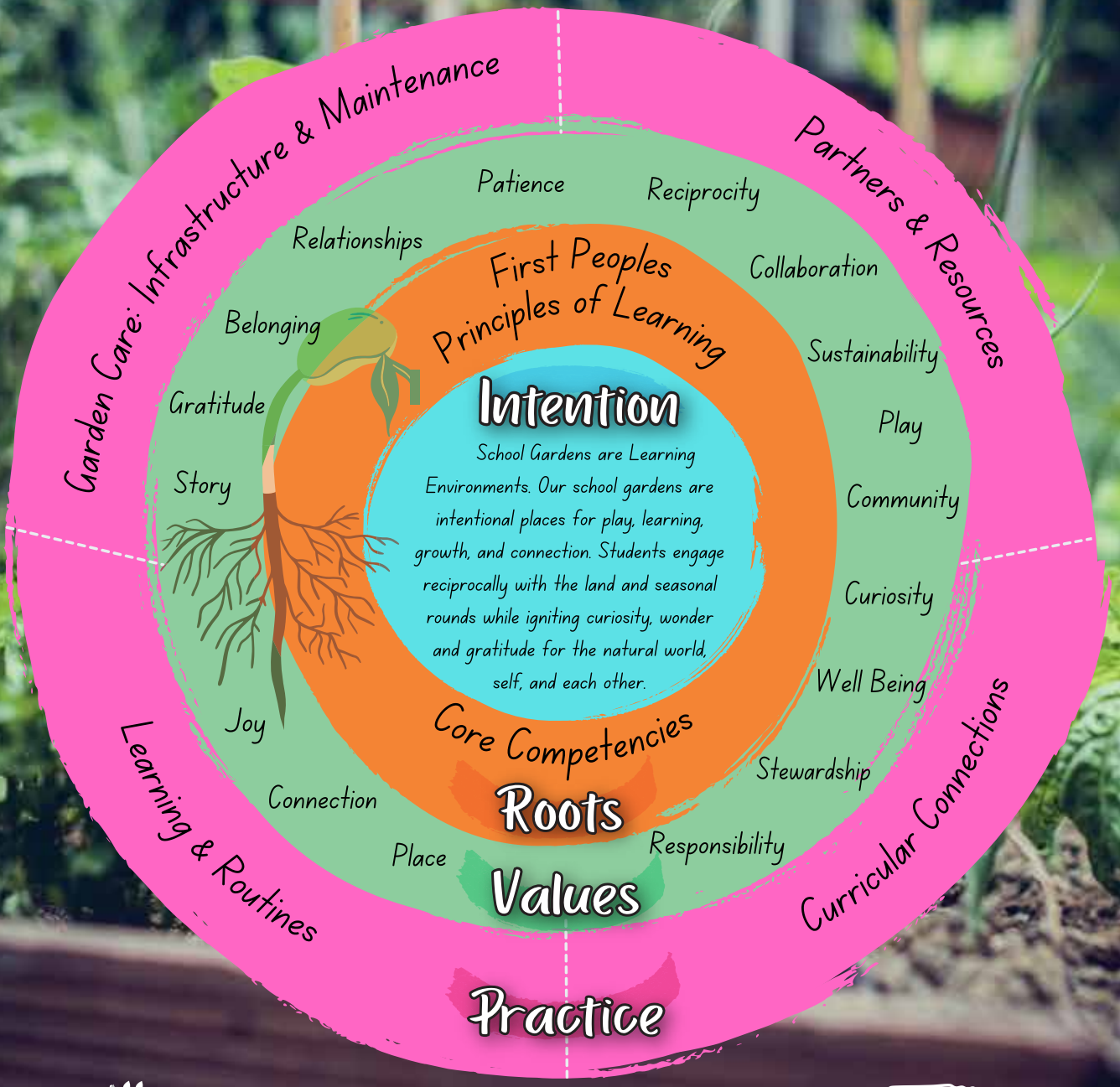
Garden-Based Learning Framework



Environmental & Outdoor Learning

Comox Valley Schools
A Community of Learners
INNOVATIVE • INQUISITIVE • INCLUSIVE

SD71 – v.2 July 2024

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Territorial Acknowledgement

We would like to acknowledge that we are on the traditional territories
of the K'ómoks First Nation. We would like to thank them
for the privilege of living on the land and the gift of working with their children.

Traditional Ecological Knowledge

First Peoples have been the stewards of this place since time immemorial, working reciprocally with the land and sea to provide an abundance of healthy rich foods for their families and community.

A reciprocal relationship with the land and water is an integral way of being for the local K'ómoks First Nation. The land and sea provide everything needed to nourish and care for the people of this place. Gardens that are cared for and free to exist, rather than controlled and dominated, are vital, diverse, resilient spaces.

Food is not limited to medicine and nourishment; it is also an opportunity to come together and share in community and build relationship. The name "Pentlatch" itself means "satiated with full belly", a testament of the richness of this place and the importance of food from the land to the local Indigenous people of the Comox Valley.

The district's Garden-Based Learning Framework recognizes and honours the Indigenous wisdoms of cultivation and harvesting on the land. Our school gardens celebrate and reflect the complexities of strength, resilience, and relationship with the natural world.

Cultural Significance

Prior to European settlement, much of southeastern Vancouver Island was dominated by Garry Oak ecosystems, playing an important role in the rich and complex culture of the First Nations of this region. In the past, some First Nations deliberately burned selected woodlands and meadows to maintain open conditions and promote the growth of berries, nuts, and root vegetables such as camas.

Garden-Based Learning

Garden-Based Learning encompasses programs, activities, and projects in which the garden is the foundation for integrated learning, in and across disciplines, through active, engaging, real-world experiences that have personal meaning for children and youth in an informal outside learning setting. Garden-based learning is an instructional strategy that utilizes the garden as a teaching tool. In some settings garden-based learning strategies are used entirely as the educational curriculum for multiple subjects and in others it supports or enriches the curriculum.

The Garden-Based Learning Framework was informed by the collaboration among teachers from the garden-based learning lead schools as we explored the guiding questions below.

Garden-Based Learning - Guiding Questions

What garden-based learning approaches, structures, and practices foster environmental stewardship and connections to place?

How can schools develop and sustain garden spaces as an ongoing learning environment?

The experiences of co-learning and co-creating with committed teachers from around the district and with input from the Indigenous Education department are much appreciated. We are filled with gratitude and appreciation of the time spent growing and working together, and the deep heart-filled contribution by all who participated.

Lead Garden Schools – 2023

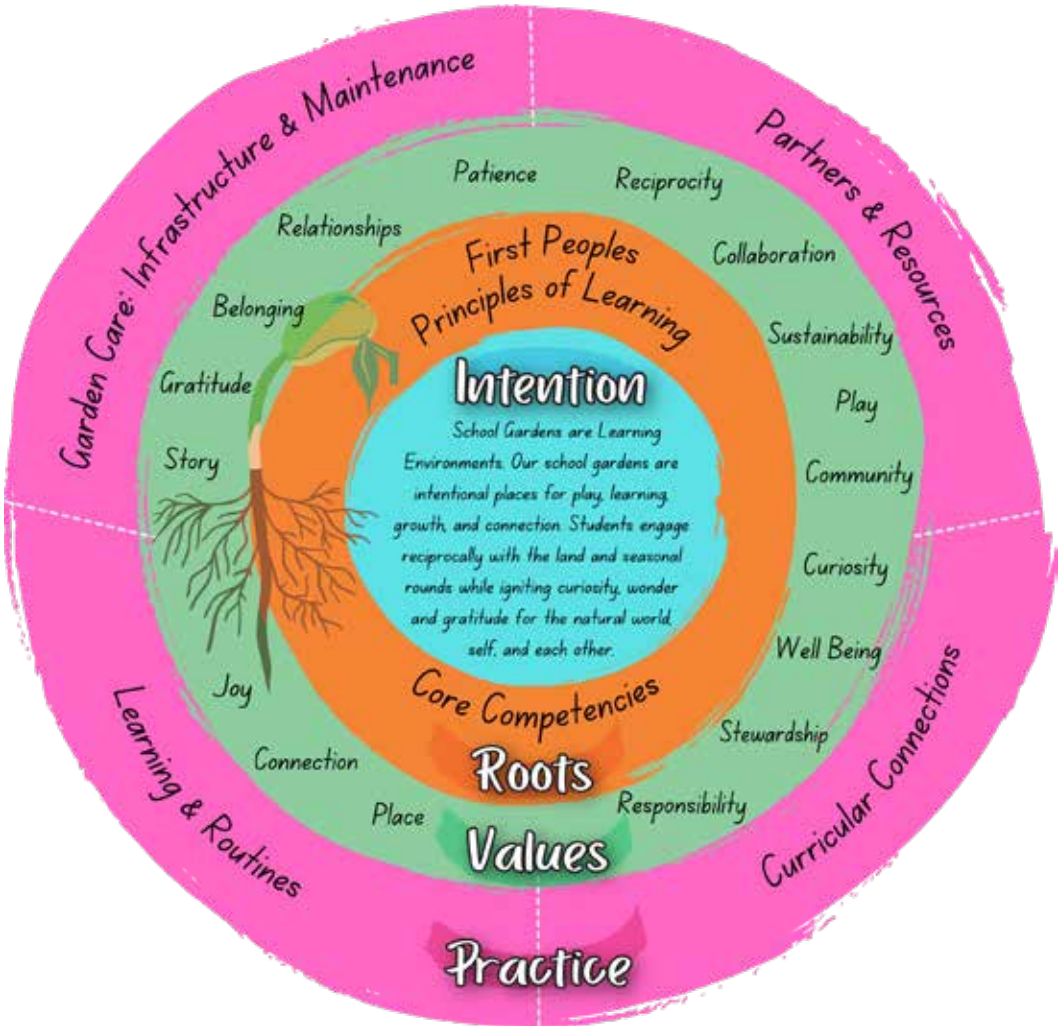
Airport Elementary School
Arden Elementary School
Brooklynn Elementary School
Denman Island Community School
Huband Park Elementary
Navigate NIDES
Ecole Puntledge Park Elementary

Purpose

The Garden-Based Learning Framework is intended as a resource to school teams in implementing meaningful learning opportunities for students within garden spaces.

There are various ways to approach garden-based learning, depending on student learning goals and needs; and each school garden evolves differently, depending on its site-specific nature, qualities, and circumstances. With these ideas in mind, the Framework provides guidance, multiple entry points, and natural extensions for student learning that is adaptable and responsive. Additionally, it encourages sense of community through holistic participation and fosters story, expertise, experience, connections, and commitment.

The Garden-Based Learning Framework is an invitation for teachers to engage both personally and professionally with pedagogies that fosters meaningful environmental stewardship. In collaboration with your school's garden-based learning team, the ideas within the Framework can be approached in ways that make sense for your students' learning, garden spaces, and school goals.



This graphic depicts the highlights of the Framework, and the following section elaborates its components.

Intention

School gardens are intentional places to learn.

Our school gardens are intentional places for play, learning, growth, and connection. Students engage reciprocally with the land and seasonal rounds while igniting curiosity, wonder and gratitude for the natural world, self, and each other.

Gardens as an ecological milieu and learning space

When school gardens have strong roots in academic learning and are integrated into school life, they are not viewed as an 'add on' to the curriculum or as afterthoughts. With academic learning as a central goal, garden-based learning can be integrated into a continuum that addresses held dichotomies of nature and culture, school and community, ecology and economy, and life and learning."

- Learning Gardens and Sustainability Education:
Bringing Life to Schools and Schools to Life (2012), p. 22

Supports all learning:

- Increases student motivation to learn
- Encourages wonder, play and curiosity
- Encourages application and transfer of learning to diverse contexts
- Enables emergent learning and student agency
- Promotes physical development and cooperation

Nature connections:

- Enables firsthand experiences in and with the natural world
- Builds awareness and relationship with the natural world and other living beings
- Provides opportunities for reciprocation with the natural world
- Immerses students in the phenomenon of our local place

School culture:

- Can build community and sense of belonging
- Provides opportunities for collaboration and leadership skill development
- Fosters school pride and care for the schoolgrounds

Roots

Garden-based learning is rooted in the First Peoples Principles of Learning and the Core Competencies.

Learning in the garden connects students with community and place in meaningful ways as well as fosters ongoing student reflection about self and nature. These roots are foundational and are revisited frequently throughout the garden-based learning process.

Rooted in the First Peoples Principles of Learning

- Learning with the land ultimately supports the well-being of the self, the family, the community, the land, the spirits, and the ancestors.
- Garden environments are dynamic and support a holistic, reflexive, reflective, experiential, and relational connection
- Caring and tending to a garden involves recognizing the consequences of one's actions.
- A garden is a shared space and can hold space for others including generational roles and responsibilities.
- The role of Indigenous knowledge supports the dynamic nature of garden-based learning and developing a deeper connection to the land and traditional cultivation practices.
- Learning is embedded in memory, history, and story.
- Learning from the land involve patience and time.
- Garden-based learning lends itself to exploration of one's identity and one's relationship with the land.
- Learning involves recognizing that some knowledge is sacred and only shared with permission and/or in certain situations.

Rooted in the Core Competencies

The Core Competencies are sets of intellectual, personal, and social and emotional proficiencies that all students need in order to engage in deep, lifelong learning. In addition to formal learning opportunities, students grow their competencies within informal learning spaces, including school gardens. Incorporating literacy and numeracy foundations as well as 'doing' the curricular competencies of the curriculum into garden-based learning opportunities deepens personal connection with nature and fosters meaningful engagement as environmental stewards.

BC Curriculum – Core Competencies

- Educated citizens and lifelong learners.
- Embedded throughout all of the curriculum in all areas of learning.
- Student reflection and self-assessment.

Social Awareness and Responsibility

Facet - *Contributing to community and caring for the environment* – Students develop awareness of and take responsibility for their social, physical, and natural environments by working independently and collaboratively for the benefit of others, communities, and the environment. They are aware of the impact of their decisions, actions, and footprint. They advocate for and act to bring about positive change.

Values

A holistic and student-centered learning approach fosters the development of environmental stewardship.

Student-centred approaches presume student competence and potential, recognizing and valuing their agency as gardeners and environmental stewards. The Framework is based on values that are grounded in the roots and reflect the daily practices of community, care, and growth. The values listed below are integrated into garden-based learning and inform the design of the Framework.

Learning	Holistic	Relationships
Belonging	Student-Centred	Responsibility
Community	Joy	Stewardship
Collaboration	Patience	Story
Connection	Play	Sustainability
Curiosity	Place	Wellbeing
Gratitude	Reciprocity	

Student-centered approaches that can deepen meaningful learning experiences in the garden include:

Environmental Stewardship: responsible use and protection of the natural environment through conservation and eco-friendly practices to enhance ecosystem resilience and human well-being.

Play Pedagogy: integrating children's play experiences with curricular learning, engaging them in personally meaningful activities, learning about themselves and others, and encouraging autonomy, independent motivation-to-learn, and flexibility to find their own solutions to both new and existing problems.

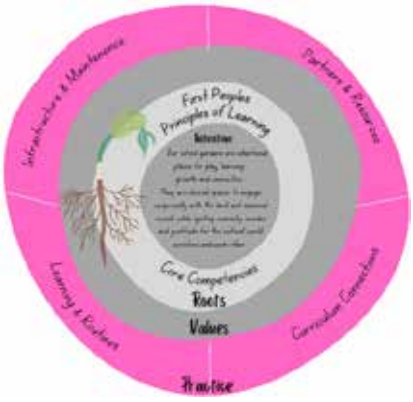
Place-Based Learning: practice that uses places and the resources found there to learn in and through nature, and across disciplines.

Land-Based Learning: the passing on of knowledge from family, Elders, and knowledge keepers to live in harmony with the environment, respecting animals, and taking only what you need.

Food Literacy: knowledge, attitudes, and skills needed to grow, choose, prepare, and enjoy food to best support one's health, community and the environment. Includes food and nutrition knowledge, and self-efficacy and confidence, and is influenced by ecologic (external) factors.

Ecological Literacy: understanding and valuing of healthy environments, and how we are connected to and have impact on natural environments.

Practice



Garden-based learning practices include learning routines, curricular connections, garden care, and partnerships. Throughout this section, suggestions are provided for teachers and school communities on how to frame learning in and through interaction with their school gardens through these practices. Possibilities include focusing on one of these areas as a starting point to learning in the garden or combining a few practices together for a more comprehensive study. As students and staff become more and more familiar, from year to year, with learning in the garden, practices shift and evolve in similar ways to other learning environments. Students and staff are encouraged to have fun and enjoy learning in the garden, bringing their own spark and stories to the holistic and authentic experiences.

Learning and Routines

Learning Themes:

- Core Competencies
- First Peoples Principles of Learning
- Reciprocity
- Nature as co-teacher
- Environmentally friendly practices
- UN Sustainability Goals
- Play and risky play

Supportive Routines:

- Establishing a garden-based learning committee
- Assessment and the garden-based learning rubric
- Core routines
- Accessibility
- Beyond the garden

Curricular Connections

- Beyond the curriculum
- Garden learning activities and ideas
- Seasonal rounds

> *"They [good teachers] are able to weave a complex web of connections between themselves, their subjects, and their students, so that the students can learn to weave a world for themselves."*
>
> **– Parker Palmer**

Infrastructure and Maintenance

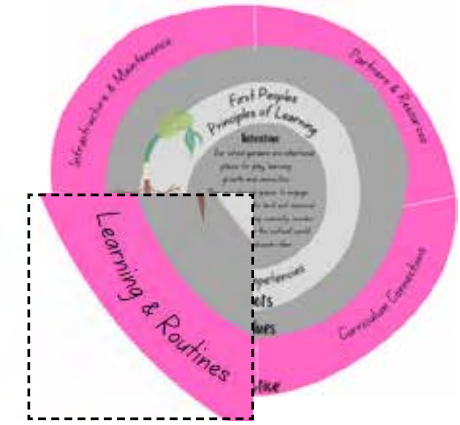
- Tools & Supplies
- Seedlings & Starts
- Soil Care
- Planting
- Weeds
- Mulch
- Compost
- Watering
- Summer Maintenance

Partners and Resources

- SD71 Comox Valley Schools
- Community
- Professional Development
- Web Based
- Grants & Funding
- Pedagogy
- Book Recommendations

Learning & Routines

Nature as Co-Teacher



Time outdoors gives learners more authentic opportunities to be scientists, to take risks, and to stretch their comfort zones. There is a way of letting nature lead when teaching outside. For example, when visiting a pollinator garden, a lesson about bees, or where food comes from, or our regional climate may emerge. Teachers can take advantage of where student questions and observations lead learning, leveraging their curiosity and agency. Once outside, what teachers do and how everyone learns changes inherently because of the shift in setting, interactions, and relationship. In this way, the Natural World provides rich opportunities for learning, and the garden space becomes the third teacher (Reggio Emilia).

"The plants are our oldest teachers – our role is not to control or change the world as humans, but to learn from the world how to be human – we humans are the newest arrivals on earth, the youngsters, just learning to find our way" (pp. 205-206).

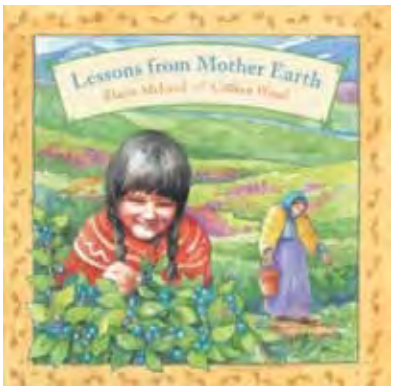
Braiding Sweetgrass ~ Robin Wall-Kimmer (2013)

As long as I live, I'll hear waterfalls and birds and winds sing. I'll interpret the rocks learn the language of flood, storm, and the avalanche. I'll acquaint myself with the glaciers and wild gardens, and get as near the heart of the world as I can."

~ Jon Muir

When learning with the Natural World, consider the following guidance:

- Engage frequently in authentic and emergent outdoor learning experiences.
- Give the time and space required for learners to develop relationship with, understanding of, and appreciation for the land.
- Provide opportunities for learners to interact with their environment and the other-than-human community.
- View and share about the land from a holistic, interconnected perspective.



Reciprocity and Gratitude

First Nations relationships with the land influenced governance. Traditional governance was in a large part concerned with sharing and stewardship of the land and resources. Through reciprocal relationships and gratitude with one another and the land, we honour the values of traditional governance. Reciprocity and gratitude can emerge through garden-based learning as an entry point or can be expanded beyond the garden to build students' connection and relationship with and as part of the natural world. (BC First Nations Land, Title, and Governance Teacher Resource Guide)

> *"...along with the other animals, the stones, the trees, and the clouds, we ourselves are characters within a huge story that is visibly unfolding all around us, participants within the vast imagination, or Dreaming, of the world."*
>
> **~ David Abram, The Spell of the Sensuous: Perception and Language in a More-Than-Human World**

Honorable Harvest

The Seventh Generation Principle emphasizes the need to think about how the actions of today will affect future generations to come. The honourable harvest can play a role in guiding student learning about the way we interact with the Natural World in and beyond the school garden.

- ***Thank the plants and animals when you take them for food:*** Shows respect for the plants and animals that give their lives so people can survive.
- ***Only take what you need:*** Ensures sustainability of resources, making sure that people don't take too much, so there is enough for others, and for the future.
- ***Share your food with others:*** Provide everyone in the community with enough to eat, even if they aren't able to hunt, fish, or gather berries.
- ***Only take food from your own land:*** Ensures enough resources to go around, that all resources of the land are used wisely, and that someone doesn't take too much.
- ***Use it respectfully:*** Never waste what you have taken. Share.
- ***Give thanks*** for what you have been given.
- ***Give a gift,*** in reciprocity for what you have taken.

~ Braiding Sweetgrass ~ Robin Wall-Kimmer, 2013

Environmental Stewardship and Climate Change

Global warming has increased the urgency for sustained and in-depth environmental stewardship learning. Garden-based learning can play a role in developing the mindset and skills that enable ecological care and balance. Exploring ecosystem complexity in the garden setting stimulates student curiosity and excitement as they observe and notice growth and changes over time and through the seasons. Through on-going hands-on experiences in the garden, students benefit from personal connection with the natural environment as well as intellectual retention of complex information, ideas, and perspectives related needed for effective stewardship.

> *"We need acts of restoration, not only for polluted waters and degraded lands, but also for our relationship to the world. We need to restore honor to the way we live, so that when we walk through the world, we don't have to avert our eyes with shame, so that we can hold our heads up high and receive the respectful acknowledgment of the rest of the earth's beings."*
>
> **~ Robin Wall Kimmerer, Braiding Sweetgrass**

Today, 24% of greenhouse gases come from land use and agriculture. Garden-based learning can help teach students tangible ways to mitigate these climate risks.

Meat and climate change – Livestock production is a major source of methane emissions and world deforestation. Growing food in school gardens increases student's preferences for healthy fruits and vegetables, and introduces the possibility of a more plant-based diet.

Food waste – 30% of the world's food is wasted. By growing food in school gardens, students learn how much care and time goes into producing fruits and vegetables.

Composting - and waste reduction teach students sustainable practices. Not only does composting add nutrients to the soil, decomposition is also a large part of science curriculum.

Pollution from overuse of fertilizers – School gardens teach students natural food-growing methods that do not require chemical fertilizer inputs. These include mulching, composting, soil cycles, plant diversity, and supporting beneficial insect habitat.

Food miles – An average meal travels 1,200 kilometres before we eat it. When schools have vegetable gardens and source their cafeteria food from local farmers, they reduce food transportation emissions, and build community with local growers.

Sourced from: *School Gardens: Preparing Kids for Climate Change Teaching Skills for a Sustainable Future*

BC Farms & Food - Permalink
October 23, 2019

https://bcfarmsandfood.com/school-gardens-preparing-kids-climate-change/

UN Sustainability Goals

The UN Sustainability Goals are an urgent call for action by all countries in a global partnership. They recognize that ending poverty and other deprivations must go hand-in-hand with strategies that improve health and education, reduce inequality, and spur economic growth – all while tackling climate change and working to preserve our oceans and forests.

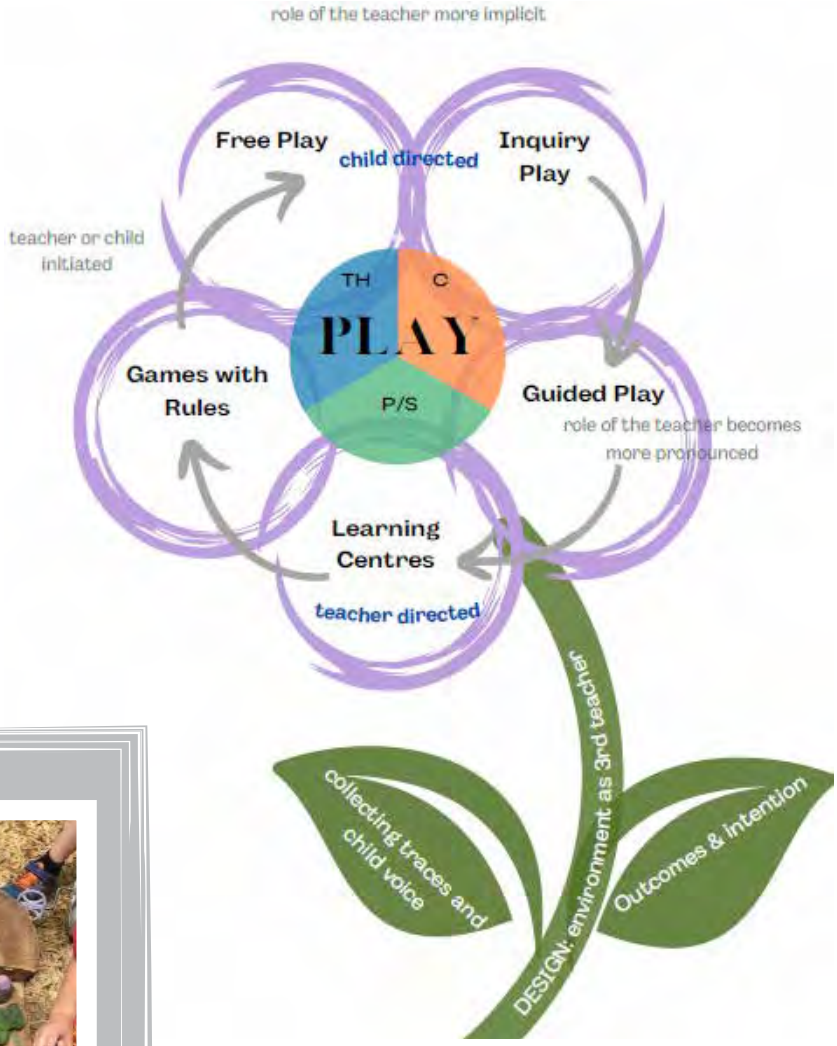
How does garden-based learning support the UN Sustainability Goals and connect to global awareness, thinking, and action?

Planting and Harvesting Quinoa

Did you know that harvesting quinoa is a laborious process? This topic can be a catalyst to larger social justice conversations about food prices and access, food security, farming practices, and/or equitable pay.

Play Pedagogy

Play is a voluntary, enjoyable activity that fosters learning, and is often emergent with no specific purpose or end goal in mind. Play-based learning encourages children's curiosity and excitement as lifelong learners. Play-based learning also helps children develop social skills, and language and numeracy skills. With thoughtful design, the school garden can become an ongoing third teacher for your students, prompting collective experiences throughout the day that further environmental stewardship and social responsibility.



- Setting up centres for garden-based learning can become a familiar routine to establish in the school garden environment.
- Garden-based learning may begin in circle, with an anchor story, or a direct instruction lesson. Students can then break off into centres for further exploration. This provides space for student choice and discovery to emerge.

Four Components of Quality Playful Learning Environments

sourced from "Learning Through Play at School—A Framework for Policy and Practice"; Rachel Parker, Bo Stjerne Thomsen, & Amy Berry; in *Frontiers in Education, v 7, article 75: February 2022*

Child Experience

How will the student experience this learning as playful?

The child's experience as a component is of equal importance to the other three.

We see the experience through students' eyes to understand what learning feels and looks like to them.

children have the right to participate and be heard
(UN Human Rights, 1989)
children have a right to be recognized as capable
(NAEYC, 2015)
Children need to make choices about their learning
(Fullan and Langworthy, 2014)

reflective questions
Where and when is the child's voice heard?
Where and when do they have agency over the experience?
What about this activity can I release to the children to determine?

Teacher as Facilitator

The role of teacher shifts according to intention and type of play

Thoughtfully designed learning experiences require effective facilitation to reach intended outcomes.

Skillful facilitation requires a blend of teacher-guided, student-led, and teacher-directed practices.

Teacher engages in:
monitoring
adjusting and responding
continuous assessment
emerging curriculum
scaffolding

reflective questions
What is the range of facilitation types provided?
How do I respond to individual needs?
How am I balancing guidance and open-ended inquiry?

Design: Environment as 3rd Teacher

Design brings together the intentions for learning and the experience of play.

Making use of all available resources to best achieve the intentions for the learning experience.

includes:
classroom as a learning community
child's self-directed engagement with materials
teacher as an adaptive observer
meaningful and relevant provocations and invitations
emerging curriculum

reflective questions
How can children and teachers access a wide range of resources and physical learning environments both indoors and outdoors?
How do teachers engage in collaborative dialogue and critical reflection?

Outcomes and Documentation

Quality playful learning involves planning and intention.

We plan for the education of the whole child.

We value and pay attention to all developmental domains:
social
emotional
physical
cognitive
creative
assessment needs to be multimodal:
intangibles need their own method of documentation

reflective questions
How are teachers supported to identify individual levels of development and targeted goals for learning?
Does reporting emphasize depth over breadth and value a range of learning outcomes?

How is your school garden set up for play, curiosity, and wonder?

Seating and Gathering:

- ☐ Straw Bales – Tables – Tarps – Mats (pic)

Play Centre Ideas:

- ❑ Shelters – tarps & clamps, logs, straw bales, pallets
- ❑ Building – Large loose parts – Tires, pallets, cable wheels, logs, dimensional lumber
- ❑ Digging zone
- ❑ "Bug Hotel"
- ❑ Wonder Zone – Dinosaur – Fairy – Construction - Treasure
- ❑ Mud Kitchen
- ❑ Loose Parts
- ❑ Art area
- ❑ Water Play
- ❑ Sensory discovery – Herb Garden
- ❑ Storytelling

Bug Hotel! This is a great place to relocate unwanted or found insects during your garden-based learning time.

Think of all the things that satisfy one's curiosity and give us pleasure that result from discovery and invention.

~ Simon Nicholson, architect and play advocate

By allowing learning to take place outdoors, and fun and games to occur indoors, the distinction between indoors and outdoors, or education and recreation begin to disappear.

~ Simon Nicholson

Risky Play Risky play is a type of thrilling play that children engage in when they test their physical limits during unstructured play outdoors.

Risky Play

Risky play is a type of thrilling play that children engage in when they test their physical limits during unstructured play outdoors. Risky play is not a specific lesson or activity. A risky play practice requires the adults to be aware of, and make dynamic decisions, to remove or limit exposure to known and emerging hazards from the playscape. Exploration of risky play through garden-based learning supports student learning in the BC Core Competencies as students navigate the boundaries of peer-to-peer social interactions, physical literacy, and self-regulation.

Elements of Risky Play

- Play with great heights
- Play with high speed
- Play with authentic tools
- Play near dangerous elements
- Rough-and-tumble play
- Play where children disappear/get lost
- Impact Play
- Vicarious play

Benefits of Risky Play

- ✓ Physical Literacy
- ✓ Improves risk perception
- ✓ Overall injury rate decreases
- ✓ Adaptability – situations & environments
- ✓ Fosters a sound sense of risk
- ✓ Resiliency
- ✓ Reinforces personal identity
- ✓ Builds confidence
- ✓ Social competence

Student agency - When you <u>want</u> to say, "Be Careful!" try these prompts instead:

- What's your next move?
- Do you feel safe there?
- I' m here if you need me.
- Should we move this game to a more open area?
- Please find a safe spot for your stick while running.
- Please move slowly and carefully near the...
- Do you need more space?
- Check in with each other. Make sure everyone is still having a good time.
- If you need to run, meet me at the next trail marker!

What's important is that children have an opportunity to bond with the natural world, to learn to love it and feel comfortable in it, before being asked to heal its wounds.

~ David Sobel, environmental educator and author

For more information about play outdoors and gaining the skills and confidence to set the stage for safety and risky play, see Play Today Handbook and the Outside Play website.

Core Routines

Developing core routines in the garden space will help students focus their learning, exploration, and play, and further their independence and confidence. Consistent structure to outdoor learning time helps students know what to expect and staff can help by carefully modelling, establishing, practising and re-visiting the core routines. Consider the core routines below, working through and co-creating a plan with your students. For example, once a couple of routines are established, add another to your students' repertoire.

Core routines for the outdoors (students and teacher):

1. Site Assessment-Teacher Morning Walk: Look for hazards and notice any emergent opportunities
2. Ways to access and enter the space to encourage learning
3. Opening and closing circles
4. Centres and tasks: How might we communicate about our work and impact in the garden?
5. Using garden materials and tools appropriately
6. Harvest and food preparation and celerations
7. Large loose parts and small loose parts
8. Nature/Garden Journals
9. Reciprocity and Responsibility
10. Connections to and reflection about Core Competencies and First Peoples Principles of Learning

Sourced: Van Dusen Garden Classroom Series-2022-23 – Megan Zeni
https://vandusengarden.org/learn/teacher-pro-d/

It takes approximately **20-25 days of exposure** for a habit or practice to become routine. Frequency in outdoor and garden learning spaces will help with class management. If we take learning outside once a week it will take **21 weeks** to normalize and bring richness to our routines.

~ Megan Zeni, teacher, master gardener, and consultant

It takes approximately 40 minutes for students to get into deep play. How is our garden and outdoor learning time and space flexible and predictable enough to enable deep play to emerge?

Accessibility

Accessible garden-based learning includes diverse entry points into understanding as well as physical space and materials. Garden spaces reflect universal design for learning, ensuring access for those who may have physical limitations or limited mobility in addition to ensuring other design considerations like age-appropriateness, sensory effects, and safety. Accessible gardening practices are mindful of who will be learning in the space, ensuring every visitor has equal access to all of the space's features. In this way, schools can create garden learning environments where all feel welcome.

Physical Accessibility: Consider the height of some beds, width of space (should be a minimum of 2 m), ground covering, entrances and exits, space between beds and garden features. Kneeling pad-body mat, stool for pushing up.

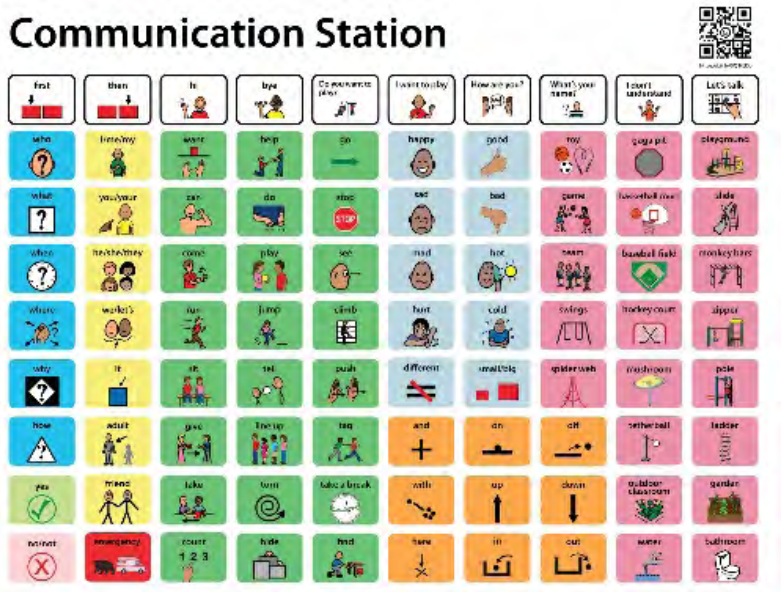
Calm: Use colours, textures, flow, sounds, and height to design for calm.

Self-Regulation: Design with opportunities to practise self-regulation in mind:

- ✓ Boarders and boundaries
- ✓ Varied zones and choice
- ✓ Meeting and gathering zone
- ✓ Sensory exploration space
- ✓ Washing station

Visuals – Schedules, step-by-step instructions, posters, communication systems

Routines: See the core routines section of this resource.



Physical activity and heavy work help with self-regulation: impact/moving, spinning/swinging, temperatures/ hunger. Allowing a space for these activities is helpful for accessibility to the garden space. Consider leaving a garden bed for just digging.

~ Andrea Willis

[Inclusion and Accessibility in the Outdoors]: **Podcast with** [KarenLai]

Sharing and Celebrating – Beyond the Garden

Garden-based learning is an extension of what students are learning in the classroom, yet how can we also connect the learning that emerges within the garden back to and beyond the classroom? Enabling an interrelationship among learning experiences among diverse environments fosters a holistic approach that incorporates the experiential nature of learning in the garden to other learning in meaningful ways. In addition, regular opportunities to celebrate and showcase garden-based learning supports meaningful integration within the school's culture.

Ideas to highlight garden-based learning beyond the garden space:

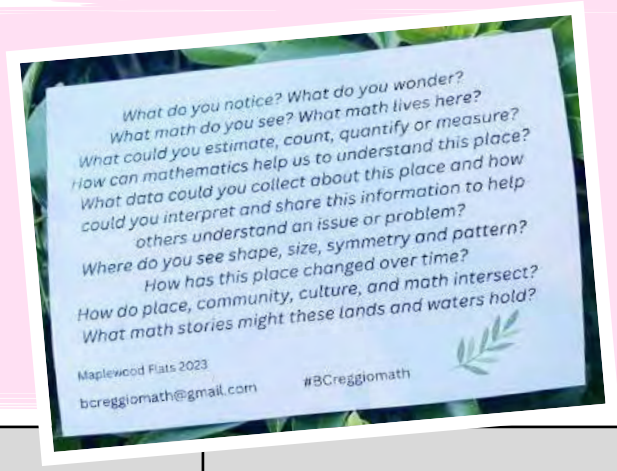
- Seed collections, harvested from the garden, and showcased in the learning commons
- Labels at the salad bar to indicate which food items were grown in the garden
- Hallway bulletin boards highlighting student observations across the seasons
- Connections to other learning that happens in other nature contexts
- Learning in the outdoor classroom and other spaces on schoolgrounds
- Celebration events
- Including a garden-based learning activity and seed pack at Welcome to Kindergarten for children to take home
- Highlighting connections in student reflection and portfolio posts

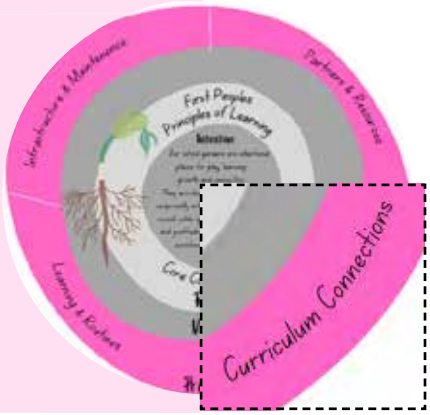
How can we celebrate the school garden as an integral part of our school's culture?

- ✓ **Share garden learning stories in th school newsletter**
- ✓ **Host a harvest dinner and invite families to join**
- ✓ **Produce school made teas as guest gifts**


GROWING FOR THE FUTURE
Seed Keeper
• A seed library for and from our very own garden!
• With a particular focus on west coast planting/growing needs

Curricular Connections

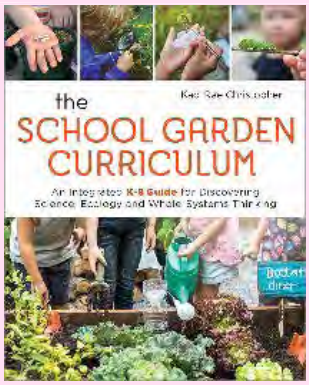




Area of Learning	Learning Activity Ideas
Numeracy	• Tally plant types in the garden. • Measure and record the temperature of the air and soil. Build a graph after collecting data throughout the year/season. • Measure and sketch a diagram or create a model of the garden. • Plan a timeline for the garden tasks, using the seed package information to know when to start the seeds so they will be ready for harvest during school months, in spring and/or fall. Consider time needed, from germination to growing to harvesting. • Calculate how much soil is needed to top up the beds for the upcoming growing season. • Explore the garden through a curricular lens (see example of prompt below).
Literacy	• Using a variety of resources, engage students in research about what types of plants to grow in the garden. Consider the relationship that companionship plants have with each other. • Keep a shared garden journal, including student observations, drawings, and reflections. • With your students, name areas of the garden to reflect observations, experiences, and relationship with the space. • Create a cookbook of recipes that include herbs grown in the garden. • Write a short story about the life of a plant or creature found in the garden. • Explore the garden using your senses. Use this experience to formulate a poem. • Compare and contrast what is happening in the garden to other outdoor spaces, like the schoolground or community forest.
Physical Literacy and Health	• Research a fruit or vegetable in the garden, including the nutrients in them. • Harvest and prepare vegetables, fruit, herbs from the garden to share. Consider what you can make to eat, drink, dry, or make with them (i.e., a soothing salve).
Science	• Sort and categorize seeds, flowers, fruit, and plants, using scientific criteria and terminology. • Compare and contrast different plants growing in the garden. Record ideas with diagrams and labelling. • Look into companion planting and rotational planting to investigate why some plants grow better with, before, or after others. • Set up a catch device to measure rainfall. Record and monitor rainfall amounts and potential impact on growth.

Science	• Pursue inquiries like "What should be planted there to help balance out the soil?" using authentic tools like a soil testing kit to test the soil in different beds and areas of the garden. • Using starters planted indoors, have students test out various growing conditions, make observations, and contrast the various results and findings. • Investigate how seasonal effects and weather patterns influence growth. For example, set up weather stations in the garden and around the school site. Record and monitor data daily. Draw conclusions about the effects of weather on growing various plants. Contrast student conclusions with what master gardeners advise. • Research an insect or creature found in the garden and explain opinions about whether they are a friend or foe. • Investigate the science of composting and apply findings to the school garden routines?
Social Studies	• Mapping activities to inform placement and design in the garden. • Research local edible and/or medicinal plants and how they are used currently and in the past. • With students, select a UN Sustainability Goal and explore its connection with agriculture here and in other parts of the world. • Explore and engage in the *Honorable Harvest.* • Invite an Elder in to share knowledge and stories about Indigenous plantings, practices, and traditions • Investigate various farming practices – compare and contrast local to global, current to historical to future, manual to high tech • Inquire into the effects of climate change on agriculture and design infographics that provide eco-friendly advice, such as promising practices for sustainable water use • Connect a social justice topic to garden-based learning, such as food security and the potential of access to community gardens • Learn about the seasonal rounds and their environmental and cultural connections • Renewable resources - Imagine possibilities for the future, such as the design and location potential for urban gardens
Arts	• Beautify the garden space, such as creating labels and signs for what is planted in the garden area and around the school site. • Using clippings from the garden and school site, as a model for a water colour painting, highlighted with a black tipped ink pen. • Make different natural paints, using fruits and vegetables, and resources from the garden and school site. • Paint with mud. • Design a "Bug Hotel", a place where unwanted garden creatures can be relocated. • Use coloured clay to make models of fruits and vegetables growing in the garden. • Re-enact the story of a pollinator.
ADST and Career Education	• Apply design thinking principles to various building projects (i.e., pollinator-mason bee house, bird houses, planter boxes) • Explore related career and life opportunities • Culinary arts and food prep • Tool use • Farming and Technology SD71 Jr. ADST Projects – Careers Programs

Consider each grade taking a deeper dive into a certain plant or aspect of the garden each year.

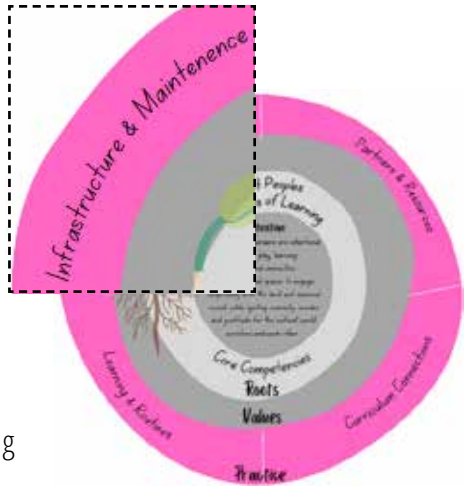


Grade	Garden Theme	Fall: *Patterns & Change*	Winter: *Discovery & Observation*	Spring: *Community & Interdependence*
Kindergarten	Introduction to gardening	Getting to know the garden	Pollination and seeds	Insects in garden space
Grade 1	Seeds	The edible parts of a plant	Travelling seeds	Sprouting seeds experiment
Grade 2	Pollinators and Cycles	Seasons and garden changes	Beneficial insects and bird pollinators	Insect pollinators
Grade 3	Becoming Soil Scientists	The garden ecosystem	Soil vitality experiment	Fostering healthy soil
Grade 4	Vermicomposting	Becoming a worm expert	Mini-worm bin project	Worms help grow a better garden
Grade 5	Composting	Composting basics	Composting in a jar experiment	Healthy soils and gardens
Grade 6	Rain gardens	The way water moves	Rain garden design	Building rain gardens
Grade 7	Renewable Resources	Catching and storing energy	Valuing renewable resources and non-renewable resources	Using small and slow solutions
Grade 8	Leadership and Stewardship	Energy cycles and observations	Designing systems	Supporting biodiversity

The Healthy School Gardens Curriculum: An integrated K-8 guide for discovering science, ecology, and whole-systems thinking

By Kaci Rae Christoopher

Garden Care: Maintenance & Infrastructure



School Garden Committee

Forming a school garden committee is essential for sustaining the garden-based learning as part of your school's culture. A school garden committee can come together to work through the questions below to figure out how to best support garden-learning at your school.

1. What are the values and intentions of your school garden?
2. What tools and resources do we need for a successful school garden as third teacher?
3. How will we communicate the garden plan to others? (i.e., Consider having a garden map, with colour coding of tasks and priorities.)
4. How might student leadership activities support garden care (i.e., forming a school garden club or asking for support from an existing leadership club)?
5. How will the space be utilized and shared among classes?
6. What gardening background and skills can our colleagues share?
7. Who should we include in communications about learning in the garden? Parents? Volunteers? Community school liaison? Others?
8. How can we celebrate the garden as an integral part of learning in our school?
9. What is our year-round garden care plan (i.e., summer watering plan)?
10. How can learning in the garden be extended to learning beyond the garden?
11. What professional learning might be needed?

*For access to the SD71Megan Zeni **Garden Series virtual workshops**, go to the EOL website>Teacher Resources>Food and Gardens>Megan Zeni*

A shared garden space promotes collective care and responsibility - a global perspective to encourage and reflect on!

A functional garden considers the space for learning and the tools needed to maintain a productive healthy garden. Garden-based learning extends to all seasons of the garden, and so garden care and maintenance need to as well. This section of the Garden-Based Learning Framework highlights the tools and materials needed to maintain the garden and what to consider in each of the seasons.

What do we need to support garden care throughout the year?

Infrastructure:

- ☐ Garden beds
- ☐ Access to water
- ☐ Storage box – shed
- ☐ Security – lock on storage and garden
- ☐ Garden debris compost zone
- ☐ Raised garden bed – accessibility

Garden Tools:

- ☐ Hand rake-three prong
- ☐ Hand trowel
- ☐ Shovel adult size
- ☐ Shovel short youth size
- ☐ Rake
- ☐ Pitchfork
- ☐ Wheelbarrow- adult
- ☐ Wheelbarrow- child
- ☐ Watering cans-small rain spout
- ☐ Fixed rain spray watering wand
- ☐ Multi spray watering wand
- ☐ Hose
- ☐ Hand clippers

Marking newly sowed seeds in the garden with a twine line will help communicate that the area is planted and needs to be watered.

- ☐ Tarps
- ☐ Storage
- ☐ Tomato cages
- ☐ Stakes
- ☐ Twine
- ☐ Row markers
- ☐ Gloves-child sizes
- ☐ Laundry basket

Seedlings & Starts

- ☐ Seedling starter soil
- ☐ Seedling trays – pots – pot making tool
- ☐ Spoons
- ☐ Seeds
- ☐ Pot-up pots

Soil care:

- ☐ Soil sifter
- ☐ Soil top-up
- ☐ Organic fertilizer
- ☐ Mulch (straw or leaves)

Summer Care:

- ☐ Sprinkler or irrigation
- ☐ Timer
- ☐ Letter to parents to check on garden-water-harvest

Rain-shower watering cans are best for an even shower over the plants. What are your core routines for watering? The soil should be moist down a full finger length.

Make pot making and labelling for your seedling starts into one of the garden stations.

Twine and stakes to mark and communicate to other classes that the space has been planted and needs watering.

Fall

Fall is the time for sharing, clean-up and putting the garden to rest. This is the time to harvest and share with others, gather leaves and mulch the garden. Mulching will help retain soil moisture and nutrients, and support garden life through out the winter. A time to build relationships with Fall and embrace its sounds, sights, smells, and tastes.

Tasks

- Harvest
- Plant Garlic
- Mulch
- Seed Saving
- Create Garden Committee
- Implement Core Routines
- Clean & store mason bees
- Communicate Garden Learning to parents

Direct Instruction

- Honorable Harvest
- Cooking & tasting
- Gifts -tea's, seeds and salves
- Pumpkin inquiries
- Mushrooms
- Decomposers
- Migration & Hibernation


Winter
Winter is for resting. The garden will be sleeping and waiting for the excitement of spring. This is the time to explore the elements of weather, being creative with play, and story telling. A time to build relationships with winter and embrace its sounds, sights, smells, and tastes.
Tasks
Plant flower bulbs & garlic
Garden gear inventory
Meet with Garden committee
Map Garden - plan for spring
Order seeds
Direct Instruction
Sit Spots
Core Routines - being prepared
Tracking weather
Shelters Building and Tarps
Winter animal survival
Story telling
Orienteering
Building community

Spring

Spring is for planting and taking care of growing seeds and established plants. It is an exciting time of year as everything seems to wake up after a sleepy winter. Frequent time outside will be exciting as these changes occur quickly and dramatically. A time to build relationships with Spring and embrace its sounds, sights, smells, and tastes.

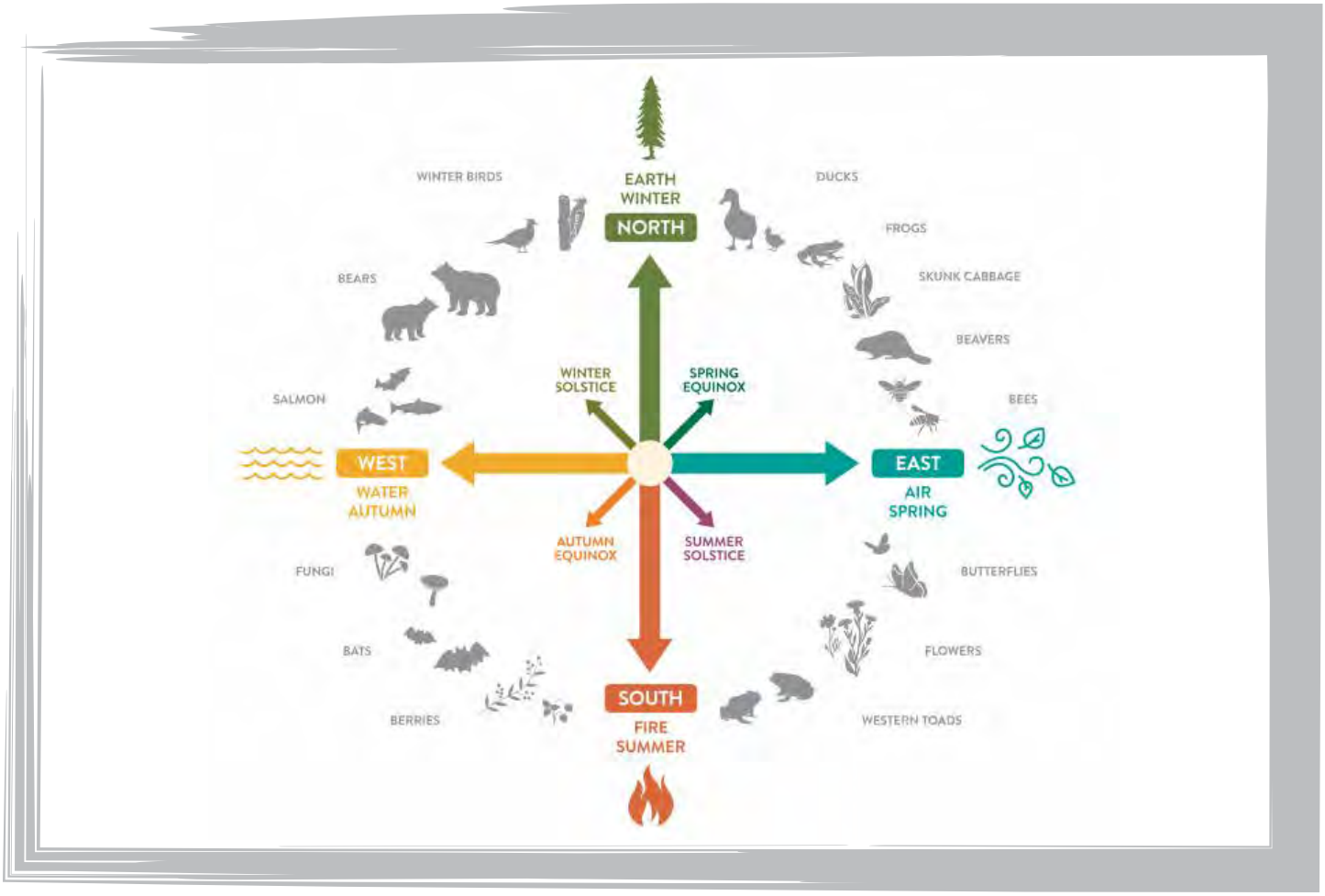
Tasks

- Clean up winter damage
- Amend and care for soil
- Fertilize
- Garden planning & planting
- Seed starts
- Thinning & Weeding
- Planting
- Watering schedule
- Meet with Garden committee

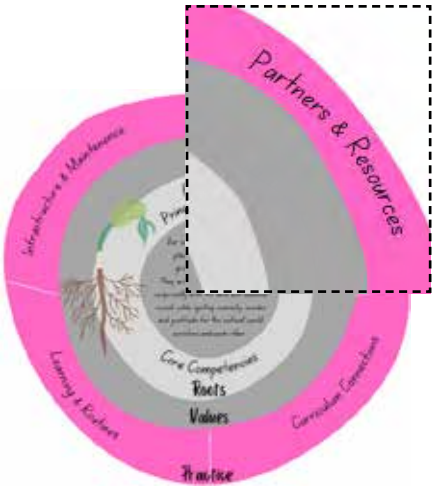
Direct Instruction

- Sit Spots
- Core Routines - planting & harvesting
- Life Cycles
- Pollinators
- Revisit honorable harvest
- Cooking exploration
- Tool use - cutting & peeling

Created with support from SD71 - Critical Friend, Megan Zeni



Partners and Resources



- **SD71- Comox Valley Schools Partners & Resources**

  - Environmental & Outdoor Learning Lead Teacher: Mentorship and support for your school garden team, whatever the entry point.
  - EOL website (Environmental & Outdoor Learning)- Link to SD71 curated Garden Learning resources. Found under Teacher Resources < Gardens & Food Literacy - Megan Zeni SD71 School Garden Series recorded videos found here.
  - Lead Garden Schools and Teacher Reps: This group of colleagues were part of the School Gardens collaboration team and have knowledge and experience they can share. They can act as mentors and provide in-district examples of strong school garden learning practices.

    Airport Elementary
    Arden Elementary
    Brookly Elementary
    Denman Island Community School
    Huband Park Elementary
    Navigate NIDES
    Ecole Puntledge Park

  - Mentorship: The mentorship program can help match teachers up with lead garden schools or colleagues who are actively using the school gardens and outdoor spaces for learning.
  - Early Learning Framework: Support and guidance on how to incorporate aspects of play into all learning environments.
  - LRC kits: SD71 Learning Resource Centre has a number of K-7 learning kits available for teachers to access that can further support garden and outdoor learning. Key word searches to consider: Pollinators, Bees, Gardening, Outdoor Learning, Plants, Soil, Worms, Rocks, Mushrooms, Fungi, Decomposers, Sustainability, Food, Interconnectedness, Biodiversity Climate Change, Tracks & Scats, Food Security, Earth Day. Destiny Search Tool
  - Indigenous Education webpage: Find resources and connections that can deepen understanding of Indigenous cultures and worldviews, and ways to embed Indigenous principles into the daily school experiences.
  - STEP Program: STEP is a program that introduces students to the construction trades industry through hands-on experiences in a realistic work environment. This program has been open to using garden-based projects for their STEP students. SD71 Careers & Trades
  - Director of Operations: They can help navigate larger maintenance issues that are site specific to your space SD71- Comox Valley Schools

Community

- LUSH Valley: Comox Valley food security organization, working closely with local farmers and schools to provide healthy food and a resource for school garden consultation.
  LUSH Valley:
- Amara Farms: Organic farmer and food security advocate, with a wealth of information to share and ideas to connect students to place.
- Parents & Community: Consider parents in your class or school who may be able to support learning in the garden. Families and the neighbourhood community can also support the summer watering plan.
- Soil delivery options:
  - Vancouver Island Enterprises
  - Black Gold Landscape and Supply
- Straw Bale sources:
  - Top Shelf
  - Shar Kare
  - Black Creek Farm and Feed
- Social Media: Grow Food Everywhere- Facebook group - Brought to you by LUSH Valley Food Action Society in partnership with the Comox Valley Food Policy Council, this group is for locals to share gardening resources and advice. The group encourages the redistribution of food growing materials and supplies; users are invited to post requests for support or offers.

Professional Learning

- Megan Zeni – School garden and outdoor learning specialist, who offers a myriad of workshops for teachers and school districts.
- Van Dusen – In person and virtual opportunities. Often partnered up with Megan Zeni and other outdoor learning and school garden specialists.
- Farm to School - Offers a series of school garden virtual workshops as well an annual Farm-2-School conference to bring these like-minded professionals together.
- UBC Agriculture in the classroom: A for-credit and non-credit course offered by UBC, integrating place-based education, environmental/ecological education, and health literacy and healthy school initiatives

Web Based

- Farm to School BC: From lessons, to webinars, and connecting to community, Farm-to-School is a great place to start your deeper dive into garden-based learning.

- Healthy Schools BC: Keeping our children healthy is the mandate for Healthy Schools BC. This includes school community connections and mental health, nutritional food, physical education, and injury prevention. Find resources connecting to all these topics, including lessons and articles.

- BC Agriculture in the Classroom: Find programs, lessons, videos, and food maps. A supportive association providing guidance and opportunities from recipes and games to career paths for grades K-12.

- Megan Zeni – Bog: Numerous blog posts about everything and anything to do with gardening. Utilize the search tool to find inspiration on specific topics (i.e., soil, rain, loose parts, pumpkins, pollinators, ADST, etc.)
  Megan Zeni's School Garden Basics

- My Seasonal Round: An Integrated Unit for Elementary Social Studies, Science, and First Peoples Learning Principles.

- Compost Education: The good, bad, and ugly of school garden composting.
  Megan Zeni – soil health & composting

- West Coast Seeds: Regional Planting guide – A helpful guide to know what to plant and when to plant for coastal BC. Connect with their donations department for old catalogues and last year's seeds for your school garden.

- LSF: Learning for a Sustainable Future: Over 1700 curated top rated lessons connecting to all aspects of environmental stewardship and sustainability. Consider refining a search to reflect our province, your grade focus, a specific UN Sustainability goal and topic. Food and Agriculture is one of many topic headings to choose from.

- Life Lab – School Garden resources from research to lessons in all aspects of garden-based learning.

- Habitat Conservation Trust Foundation – Ready to use lesson ideas that dive into inquiry and exploration of place with direct curriculum connections. Use the search tool to refine the resources.

Grants & Funding

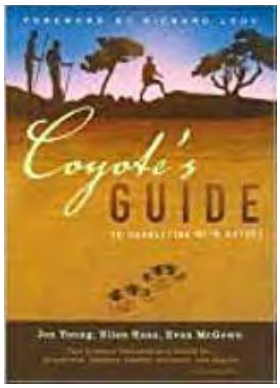
- Farm to School BC
- Whole Kids Foundation
- WWF Go Wild Grants
- HCTF - Go Grants

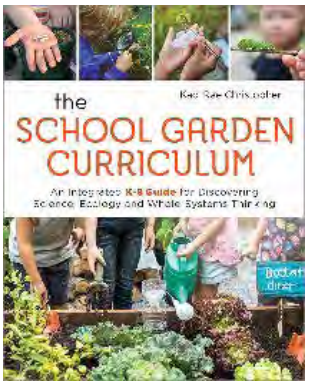
Pedagogy

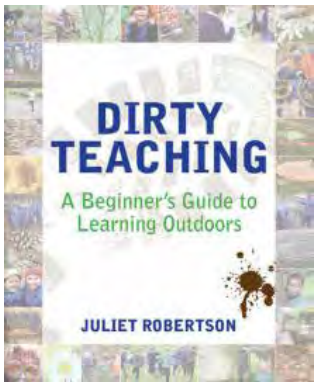
- BC Early Learning Framework
- Risky Play
- Loose Parts
- SDG's

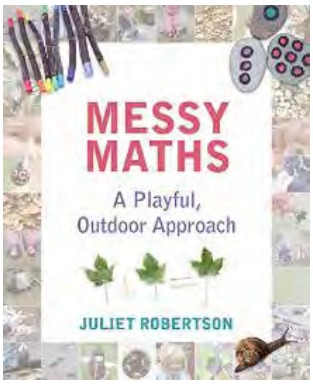
Book Recommendations

- Megan Zeni's Garden & Outdoor Learning Book Recommendations





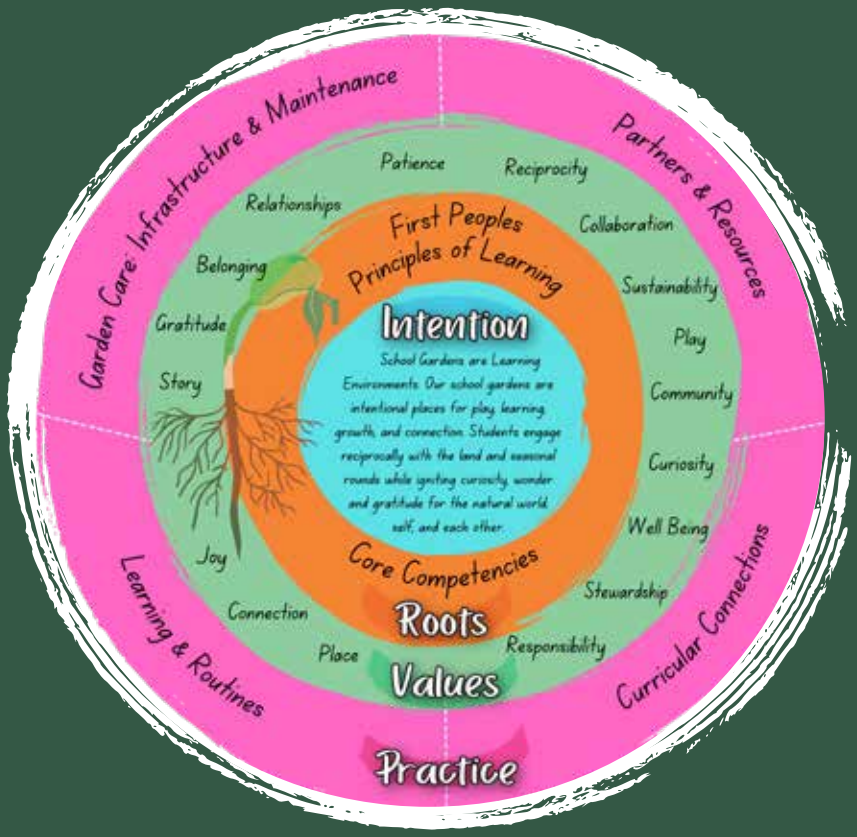




Whole School Approach to Garden-Based Learning – Self-Assessment Rubric

	Emerging 'Sprouting'	Developing 'Seedling'	Proficient 'Flowering'	Extending 'Fruiting'
School's Participation in the Garden	One champion teacher and their class care for and manage the school garden.	A few staff and their classes are involved in the care and management of the garden. Students learn as emergent opportunities arise in the garden space.	The school garden committee organizes the care and management of the school garden in sustainable ways. Many classes are regularly learning with intention in the garden, as one of their learning environments. Student agency is emphasized, and leadership encouraged.	The school garden committee fosters an environmental stewardship vision, and the whole school community shares commitment to and engages actively in the garden as a primary learning environment. Students take a lead role in the care and management of the garden and classes frequent the school garden as an embedded part of year-round learning.
Garden-Based Learning	Learning happens for a few students through emergent observations and curiosity.	Learning includes the care and management of what is growing or ready to harvest, including preparing soil, planting, and harvesting. Connections to other learning opportunities (i.e., ecology, food security) when the opportunity presents itself.	Learning includes garden care and integrates the BC learning standards with intention: - Care, management, and harvesting - Connections to seasonal rounds - Play and inquiry - Sense of place The garden is an extension of the classroom space.	Learning in the garden is connected to all areas of curriculum and there is close relationship with the local seasonal rounds. The garden is one of the main learning environments, and learning connections and extensions beyond the garden are intentional.
Indigenous Knowledge and Practices	Students learn about historical and current Indigenous growing and harvesting practices.	Elders and guest speakers share their knowledge and stories with students. Connections to place are acknowledged and fostered.	Students learn about authentic Indigenous knowledge and practices in the garden and apply them throughout the year. First Peoples Principles of Learning frame approaches to learning in class and outdoors. Traditional Ecological Knowledge is highlighted in addition to other content knowledge.	Students learn about and apply authentic Indigenous knowledge and practices in the garden and beyond the garden. Land-based learning and deepened appreciation for relation with place and community are fostered.

Health & Well Being	Students visit the garden 2-3 times in the spring.	Students spend 1 hour or less per week in the garden during the spring.	Students spend 1 hour or more in the garden year-round.	Students visit the garden daily or multiple times a week year-round.
Growing & Harvesting	Interested classes take on responsibility for the care and maintenance of one garden bed for the year.	Participating classes care for the garden together with shared responsibilities. Students enjoy the tastes as garden produce ripens and is readily available.	The garden is a shared learning space cared for by all who use it. Intentional planning is done to have harvesting occur during school months. Harvesting and preparing food is part of the garden learning experience. A summer maintenance plan is in place.	The garden space is a shared learning space and the responsibility of everyone to care for. Intentional harvesting is part of students' learning activities, culinary experiences, and celebration. Summer maintenance includes a sustainable year-by-year plan. The growing and harvesting cycles are an integral part of the schoolyear and across schoolyears.



Environmental & Outdoor Learning

Comox Valley Schools
A Community of Learners
INNOVATIVE • INQUISITIVE • INCLUSIVE

SD71 Garden-Based Learning Framework – v.2 July 2024