

A monarch caterpillar is shown on a green leaf. The caterpillar is orange with black stripes and is positioned vertically. A dark grey text box is overlaid on the left side of the image, containing the title and subtitle. The background is a soft, out-of-focus green.

# LET'S DO SCIENCE:

Using Curiosity Centres and  
Literacy Ideas to Develop the  
Curricular Competencies for  
Science  
(Grades 1-3)



@shelleyhegedus

I WANT TO ACKNOWLEDGE  
THAT WE ARE WORKING AND  
LEARNING TODAY ON THE  
TRADITIONAL AND  
ANCESTRAL TERRITORIES OF  
THE SNUNEYMUXW FIRST  
NATION





# Learning Intentions

1. Children's Natural Curiosity
2. The Need for Outdoor and Play-Based Learning
3. Our BC Curriculum
4. Fusing Science and Literacy
5. Curiosity Centres for All Students

# Success Criteria

1. I have unleashed my own sense of curiosity and playfulness
2. I see the connection between exploration/play and learning
3. I have some ideas on how I can set this up in my own classroom

How do you feel about “play” in the classroom?

On any device, go to [www.menti.com](http://www.menti.com)

# PLAYING IS THINKING

A close-up photograph of a child's hands assembling colorful LEGO bricks (red, grey, and black). The background is a warm, out-of-focus orange-brown color, suggesting a play area or a child's room. The text "PLAYING IS THINKING" is overlaid in a white, hand-drawn font at the top of the image.

## Children's Natural Curiosity

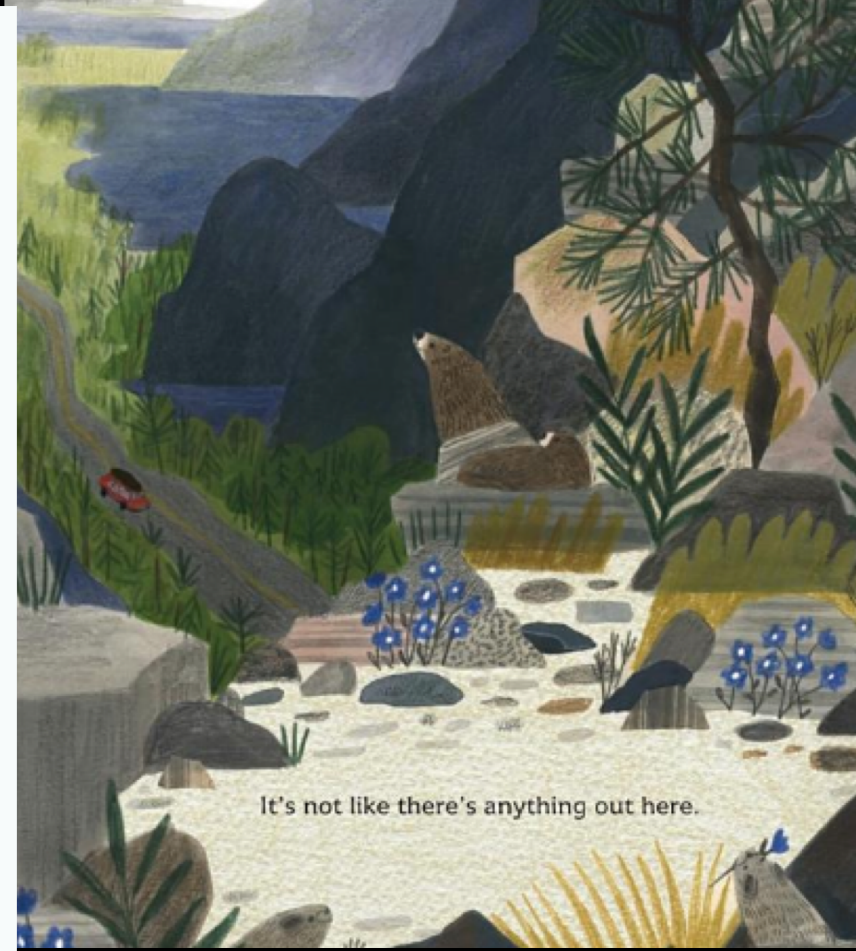
- **When a child wants to 'know' on his own, learning becomes thrilling.”**  
**Sriram Naganathan, founder of Ignite Minds**
- **Curiosity in adulthood leads to innovation in business and drives happiness in an adult's personal life when they explore their curiosities and let loose on their vulnerabilities.**



WHAT KIND OF PLAY BASED LEARNING DO WE WANT OUR STUDENTS TO BE ENGAGED IN?



# The NOT-SO Great Outdoors



It's not like there's anything out here.

# THE NOT SO GREAT OUTDOORS

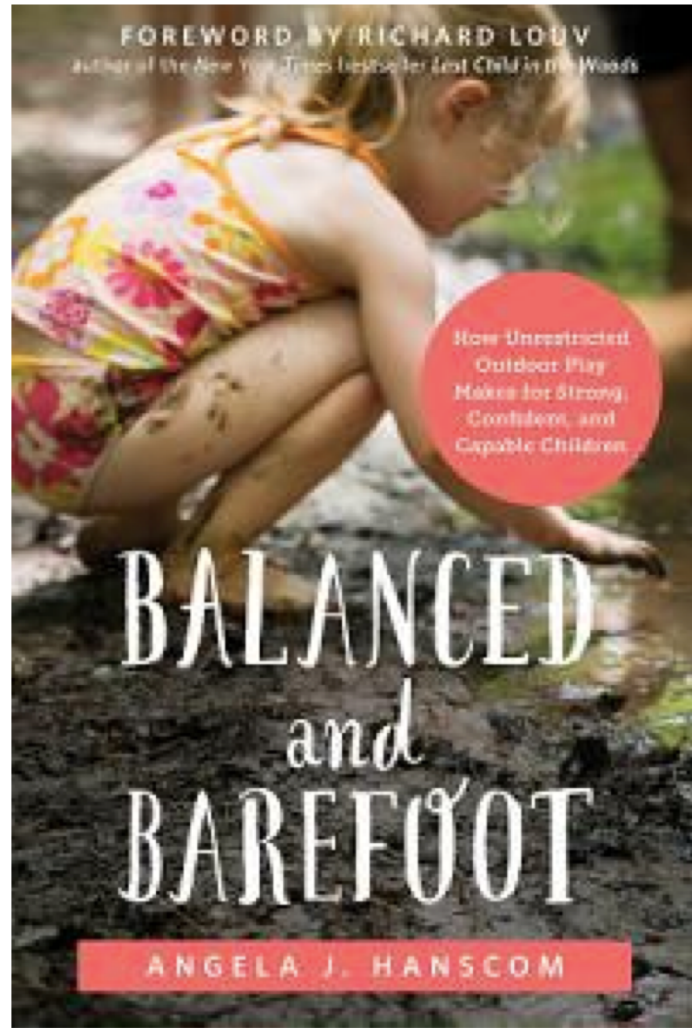
By Madeline Kloepper



Play is the highest form of research  
-Albert Einstein



**THE NEED  
FOR  
OUTDOOR  
AND PLAY-  
BASED  
LEARNING**



# The Need for exploration and Outdoor learning

- In nature, children learn to take risks, overcome fears, make new friends, regulate emotions, and create imaginary worlds. It's important that adults allow children both the time and the space to play outdoors on a daily basis. It's important that we give them the trust they deserve and the freedom they need to try out new theories and play schemes.

# PLAY TODAY HANDBOOK

K-3

## Play Today



**B.C. Handbook**



BRITISH  
COLUMBIA | Ministry of  
Education



A calm, focused, and alert state is a prerequisite to learning.

“The qualities developed through play are the same (qualities) required to succeed at school. Children who (have) strong oral communication skills, are confident, able to make friends, are persistent and creative in completing tasks and solving problems and are excited to learn, have pathways set for academic success.”

(McCain, Mustard & Shanker 2007, p.49)

# EARLY LEARNING FRAMEWORK

K-3

British Columbia  
Early Learning Framework



# Integrating Philosophies and Worldviews and Pedagogy

## Early Learning Framework

- Children are strong, capable in their uniqueness, and full of potential.
- Educators are researchers and collaborators.
- Early years spaces are inclusive.
- People build connection and reconnection to land, culture, community and place.
- Environments are integral to well-being and learning.
- Play is integral to well-being and learning.
- Relationships are the context for well-being and learning.
- Learning is holistic.

(Ministry of Education, 2019)

## First Peoples Principles of Learning

- Learning ultimately supports the well-being of the self, the family, the community, the land, the spirits, and the ancestors.
- Learning is holistic, reflective, reflexive, experiential, and relational (focused on connectedness, on reciprocal relationships, and a sense of place).
- Learning involves generational roles and responsibilities.
- Learning involves recognizing the consequences of one's actions.
- Learning recognizes the role of Indigenous knowledge.
- Learning is embedded in memory, history, and story.
- Learning involves patience and time.
- Learning requires exploration of one's identity.
- Learning involves recognizing that some knowledge is sacred and only shared with permission in certain situations.

(First Nations Education Steering Committee, 2012)

# Our BC Curriculum

Grades 1-2

## Curricular Competencies Science

## Curricular Competencies English Language Arts

### Curricular Competencies

*Students are expected to be able to do the following:*

#### Questioning and predicting

- Demonstrate curiosity and a sense of wonder about the world
- Observe objects and events in familiar contexts
- Ask questions about familiar objects and events
- Make simple predictions about familiar objects and events

#### Planning and conducting

- Make and record observations
- Safely manipulate materials to test ideas and predictions
- Make and record simple measurements using informal or non-standard methods

#### Processing and analyzing data and information

- Experience and interpret the local environment
- Recognize First Peoples stories (including oral and written narratives), songs, and art, as ways to share knowledge
- Sort and classify data and information using drawings, pictographs and provided tables
- Compare observations with predictions through discussion
- Identify simple patterns and connections

#### Evaluating

- Compare observations with those of others
- Consider some environmental consequences of their actions

### Curricular Competencies

*Using oral, written, visual, and digital texts, students are expected individually and collaboratively to be able to:*

#### Comprehend and connect (reading, listening, viewing)

- **Read fluently at grade level**
- Use sources of information and **prior knowledge** to make meaning
- Use developmentally appropriate **reading, listening, and viewing strategies** to make meaning
- Recognize how different **text structures** reflect different purposes.
- **Engage actively as listeners, viewers, and readers**, as appropriate, to develop understanding of self, identity, and community
- Demonstrate awareness of the role that **story** plays in personal, family, and community identity
- Use personal experience and knowledge to connect to **stories** and other **texts** to make meaning
- Recognize the structure and elements of **story**
- Show awareness of how **story in First Peoples cultures** connects people to family and community

#### Create and communicate (writing, speaking, representing)

- **Exchange ideas and perspectives** to build shared understanding
- Create **stories** and other **texts** to deepen awareness of self, family, and community
- Plan and create a variety of **communication forms** for different purposes and audiences
- Communicate using sentences and most conventions of Canadian spelling, grammar, and punctuation
- Explore **oral storytelling processes**



# Our BC Curriculum

Grade 3

## Curricular Competencies Science

## Curricular Competencies English Language Arts

### Curricular Competencies

*Students are expected to be able to do the following:*

#### Questioning and predicting

- Demonstrate curiosity and a sense of wonder about the world
- Observe objects and events in familiar contexts
- Ask questions about familiar objects and events
- Make simple predictions about familiar objects and events

#### Planning and conducting

- Make and record observations
- Safely manipulate materials to test ideas and predictions
- Make and record simple measurements using informal or non-standard methods

#### Processing and analyzing data and information

- Experience and interpret the local environment
- Recognize First Peoples stories (including oral and written narratives), songs, and art, as ways to share knowledge
- Sort and classify data and information using drawings, pictographs and provided tables
- Compare observations with predictions through discussion
- Identify simple patterns and connections

#### Evaluating

- Compare observations with those of others
- Consider some environmental consequences of their actions

### Curricular Competencies

*Using oral, written, visual, and digital texts, students are expected individually and collaboratively to be able to:*

#### Comprehend and connect (reading, listening, viewing)

- **Read fluently at grade level**
- Use sources of information and **prior knowledge** to make meaning
- Make connections between ideas from a variety of sources and **prior knowledge** to build understanding
- Use developmentally appropriate **reading, listening, and viewing strategies** to make meaning
- Recognize how different **texts** reflect different purposes.
- **Engage actively as listeners, viewers, and readers**, as appropriate, to develop understanding of self, identity, and community
- Explain the role that **story** plays in personal, family, and community identity
- Use personal experience and knowledge to connect to **text** and make meaning
- Recognize the **structure and elements of story**
- Show awareness of how **story in First Peoples cultures** connects people to family and community
- Develop awareness of **how story in First Peoples cultures connects people to land**

#### Create and communicate (writing, speaking, representing)

- **Exchange ideas and perspectives** to build shared understanding
- Create **stories** and other **texts** to deepen awareness of self, family, and community
- Plan and create a variety of **communication forms** for different purposes and audiences
- Communicate using sentences and most conventions of Canadian spelling, grammar, and punctuation
- Develop and apply expanding **word knowledge**
- Explore and appreciate aspects of First Peoples **oral traditions**
- Use **oral storytelling processes**

# Fusing **Science** and Literacy

Habits of mind in Science include sustained curiosity; a valuing of questions; an openness to new ideas and consideration of alternatives; an appreciation of evidence; an awareness of assumptions and a questioning of given information; a healthy, informed skepticism; a seeking of patterns, connections, and understanding; and a consideration of social, ethical, and environmental implications.

(BC Ministry of Education definition of habits of mind for Science)

# Fusing Science and Literacy

Literacy is the ability to make meaning from text and express oneself in a variety of modes. This includes comprehending, making connections, critically analyzing, and creating and communicating for a variety of purposes. (BC Ministry of Education definition)

*Literacy: the ability, confidence and willingness to engage with language to acquire, construct and communicate meaning in all aspects of daily living. Language is explained as a socially and culturally constructed system of communication. (Alberta Education)*





# Curiosity Centres for All Students

The purpose of having curiosity centres is to activate curiosity, encourage exploration and discovery, and have conversations around things that provoke thought and questions.

Shelley Hegedus



# Types of Curiosity Centres



Real life items that students can observe, play with, manipulate and/or test scientifically.  
Class pets, plants, magnets.



Open-ended materials for building and creating structures, habitats,



Scientific materials to test things like buoyancy, properties of matter etc such as containers, water, water droppers, scales etc

A row of four pinecones of varying sizes is arranged on a dark wooden surface. The background is a soft-focus green, suggesting an outdoor setting. A white rectangular text box with a thin black border is positioned in the upper left quadrant, containing the text.

TURN AND TALK

WHAT KINDS OF THINGS COULD  
YOU PUT INTO A CURIOSITY  
CENTRE IN YOUR CLASSROOM?



# **INTEGRATING LITERACY**

Ideas and Mentor Text Suggestions

# Story Workshop

Based on a mentor text provocation

Open ended and open-ended theme







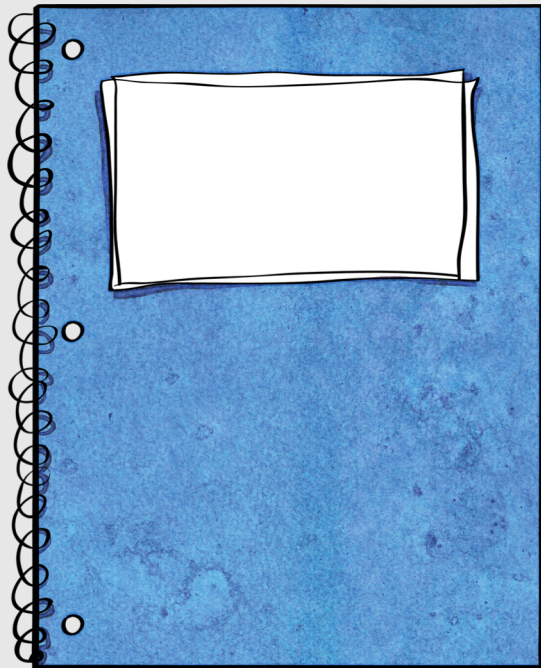
## Science Materials Storage

This container can be found at Ikea. It is great for keeping a collection of items for a given topic for students to use as a way to explain their learning as they build a habitat, create an ecosystem or other ideas. It is also the perfect place to keep story workshop materials.

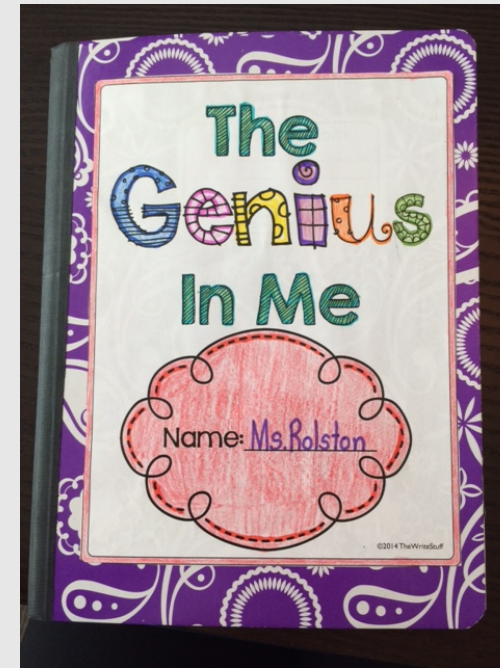


# Writing

## Science Journals



## Genius Hour or Inquiry Notebooks



IS THERE A NEED  
FOR AN A/B  
CURRICULUM IN  
SCHOOLS IN  
ORDER TO  
TEACH  
COMBINATION  
CLASSES?



As you plan your Science curiosity centres and integrate rich literacy activities, remember that you are a researcher, an active participant in the pursuit of wonder, the joy of curiosity and the quest to know more about the world we live in- just like your students.