

Earth & Space

Grade 1

Earth & Space

Grade 1



A framework for Inquiry

Significant Content: A focus on important knowledge and concepts derived from standards. Students should find the content to be significant in terms of their own lives and interests.

A need to Know: Activate learner curiosity. Engage student interest and initiate questioning with an entry event: this could be a story, a video clip, a photograph...

A Driving Question: A question that captures the heart of the inquiry in clear, compelling language, giving students a sense of purpose and challenge.

Authentic Purpose: Establishing an authentic purpose for the tasks we invite our learners to explore, enriches learning opportunities.



Voice and Choice: Guided by the teacher, learners have voice and choice in terms of design, what resources they will use and how they structure their time.

Revision and reflection: Learners go through a process of seeking feedback from their peers to think in-depth about their inquiry. Students learn that revision and reflection are frequent features of real-world work.

In-depth Inquiry: Learners follow a trail that begins with their own questions, leading to a search for resources and the discovery of answers and ultimately leads to generating new questions, testing ideas and drawing their own conclusions.

21st Century Competencies: Collaboration, communication, creativity, critical thinking, problem solving and social responsibility.

Adapted from: Larmer, J. & Harganahalli, J. (2012). *8 essentials for project-based learning*.

Suggested Ways to Engage Students in Science Inquiry:

What observable patterns and cycles occur in the local sky? (A Need to Know)

Make observations of the appearance of the moon and stars at night; sunrise/sunset, cloud formations (using the cloud viewers in the kit) as weather and /or seasonal indicators. Events that occur in the local sky such as fog, wind changes, storm watching, snow and other weather. Create drawings based on these observations. Do this over a period of a few days so changes can be noted.

What observable patterns and cycles occur in the local landscapes? (A Need to Know)

I Wonder Walks to local areas such as swamps, rivers, forests, beaches, bluffs to observe landscapes. Investigate animals and plants in each area. Notice landscape features. Re-visit throughout the year to observe changes due to seasons and weather.

Goose Spit is an example of Glacial till—rocks falling, erosion. Cumberland Gravel Yard shows excellent examples of glacial till which is evidence of erosion caused when the glacier retreated. Gravel is always an example of an erosion process. Rounded on beaches due to tide/water. Crushed rock has sharp edges .

How do patterns and cycles in the sky affect living things? (A Driving Question)

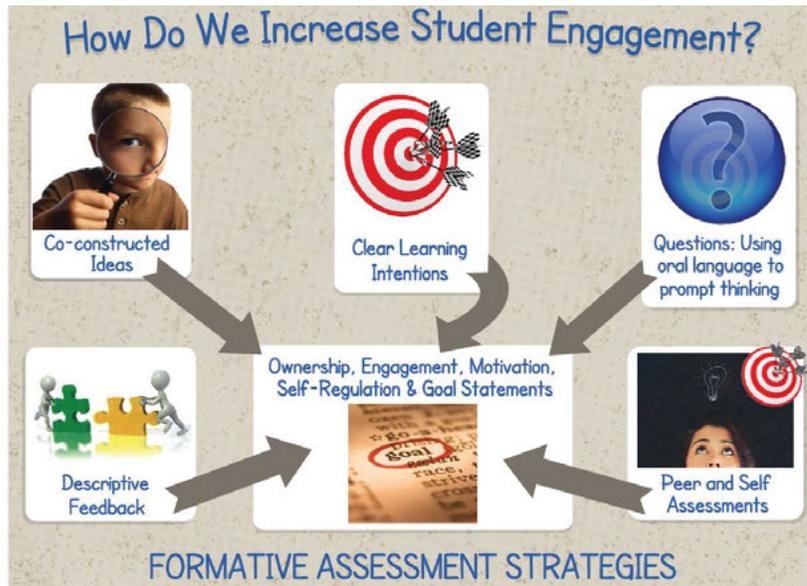
Seasonal affects: hibernations, nesting, migration, nocturnal

Weather affects: adaptations, shelters

Local field trips could include viewing Swan Migration in local area. Sea lions in Fanny Bay. Plant observations in local area to look at changes. Having guests in from Sierra Club, MARS, Streamkeepers to talk about animals and seasonal affects are suggested.

How do patterns and cycles in the sky affect landscapes? (A Driving Question)

I Wonder Walks to local areas such as swamps, rivers, forests, beaches, bluffs to observe landscapes. Re-visit throughout the year to observe changes due to seasons and weather. Look for notable changes such as flooding after a big rain. Beaches loaded with logs after a windstorm, erosion of river banks, etc. Note animals visible each time. For example, eagles feeding on the beaches and mud flat area during spring. Swans in fields early spring. Bears feeding and getting ready for hibernation.



Suggested Ways to Embed Assessment *for* Learning Strategies:

I can make observations about patterns in landscapes and their affects on living things.

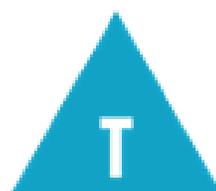
Build a variety of landscape models for the local areas (materials contained in kit). Which animals and plants are evident in each type of landscape?

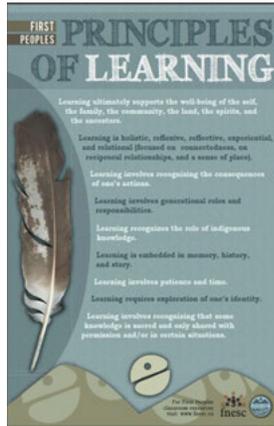
I can observe objects and events in familiar contexts.

Using a sand table, pack down the sand as hard as possible, pour in water. Have students make observations of what happens. Repeat with soil, gravel and notice differences and similarities .

I can experience and interpret the local environment.

Record experiences in an I Wonder Journal. Build landscape models with materials provided in the kit. Use a *Collaborative Learning Map* to assess this activity.





Suggested Ways to Weave Aboriginal Ways of Knowing within this unit:

Aboriginal knowledge of the sky and landscape.

* Aboriginal astronomy resources kit can be ordered from LRC.

Skytellers DVD Listen to an aboriginal oral story and then a science lesson follows. Suggested: *Day and Night*, "Ant Dances for Light" and *Moon Phases*, "The Girl Who Married the Moon"

The Star People S.D. Nelson

Sky Sisters Jan Bourdeau Waboose

Seasonal Rounds Open Schools BC

Strong Learners Sort and Categorize Cards from Strong Nations

Seasons Lesson Plans on our School District Website.

<http://www3.sd71.bc.ca/School/abed/resources/staffresources/elementary/Pages/Seasons-Lesson-Plan.aspx>

Importance of the sun and moon to the First Peoples with respect to customs and traditions. Use local stories such as the Queneesh Glacier.

From the Mountains to the Sea: We Share the Seasons Brenda Boreham and Terri Mack

Mouse Celebrates Winter Solstice

<http://www3.sd71.bc.ca/School/abed/resources/staffresources/elementary/Pages/Mouse-Celebrates-the-Winter-Solstice.aspx>



Other Resources:

A great little video by Bill Nye, explain the reasons for the seasons.

<https://www.youtube.com/watch?v=KUU7lyfR34o>

A variety of interactive games, videos and songs for young learners.

watchknowlearn.org

A great resource for a variety of hands on science activities and printables.

education.com

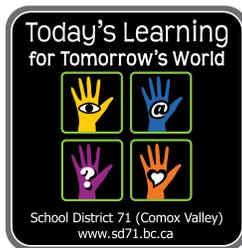




Building Inquiry: How does collaboration help us create and problem solve?

- Green Light: I can do this **independently**.
- Yellow Light: I can do this **with guided support**.
- Red Light: I can do this **with direct support**.

Learning Target				Evidence
I can share my ideas with my team.				
I can listen to others' ideas.				
I can make my group feel comfortable (smile at them, use kind words, act like I want to work with them).				
I can work with my group to get the job done.				
I can explain the purpose of our project.				



An electronic copy of this teacher guide can be found on Learn71 at <https://portal.sd71.bc.ca/group/wyhzgr4/Pages/default.aspx>

Contributors: Cheryl Adebar, Thea Black, Noah Burdett, Doug David, Kara Dawson, Colleen Devlin, Allan Douglas, Gerald Fussell, Nora Harwijne, Sarah Heselgrave, Debra Lovett, Kim Marks, Gail Martingale, Dale Mellish, Heather Mercier, Jane Rondow, Teri Ingram, Debbie Nelson, Joan Pearce, Stewart Savard, Laura Street, Lynn Swift, Carol Walters.

School District No. 71 (Comox Valley) grants permission for teachers to use these resources for educational purposes.

