



The Consortium
Alberta Professional Learning Consortium

SCIENCE

Summer

Symposium

A Deeper Dive Into Science

Planning

Day 3
August 21, 2024

Presenter: Chris Zarski

Land Acknowledgement

In the spirit of reconciliation, we want to acknowledge that this gathering is taking place on the traditional lands situated on Treaty 6, home to the Cree, Saulteaux, Blackfoot, Dene, Métis and Nakota Sioux. We acknowledge that this land is a traditional meeting ground giving voice to its original peoples and the story of creation of this country since Time Immemorial.



Honourable Harvest - Robin Kimmerer



Fanshawe Institute of Indigenous Learning



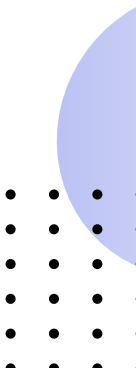
Goal

This session will examine provide an overview of the content of the new Science curriculum, and examine its architecture to demonstrate how the knowledge, understandings, and skills and procedures (KUSPs) work together to create deep learning opportunities for students through the lens of the three phases of learning: surface, deep and transfer.

A quick tour of available resources on the ARPDC website and New LearnAlberta site will wrap up the session.



Agenda

-
1. “Old” vs. “New” quick review of terminology
 2. Phases of Learning - quick review in light of ‘new’ vs ‘old’
 3. Using the Numbered Outcomes to navigate the resources provided
 4. Concept Progressions - looking at Living Systems as a guide to work our way through available sources.
 5. A Closer Look At KUSPs - Understandings
 6. Phases of Learning
 7. Resources
 8. Q & A
-
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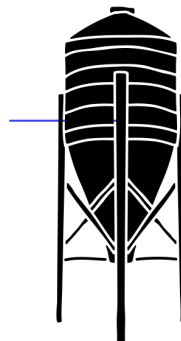
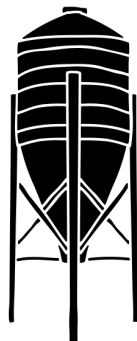
The background features several large, semi-transparent circles in shades of teal, red, pink, and light blue. There are also two rectangular areas filled with a grid of small black dots, one in the top right and one in the bottom left. A thin black line curves across the right side of the image.

**Listen
Learn
Collaborate
Share**

Source: Listen, Learn, Collaborate and Share by [Will Merrifield](#)

Previous Science Curriculum: Topics

Silos



GR. 1

Seasonal Changes

Needs of Animals and
Plants

Creating Colour

Building Things

Senses

GR. 2

Small Crawling and Flying
Animals

Buoyancy and Boats

Magnetism

Exploring Liquids

Hot and Cold
Temperature

GR. 3

Building with a Variety of
Materials

Testing Materials and
Designs

Rocks and Minerals

Hearing and Sound

Animal Life Cycles

GR. 4

Building Devices and
Vehicles

Light and Shadows

Plant Growth and
Changes

Waste and Our World

Wheels and Levers

GR. 5

Electricity and Magnetism

Mechanisms using
Electricity

Classroom Chemistry

Weather Watch

Wetlands Ecosystems

GR. 6

Air and Aerodynamics

Flight

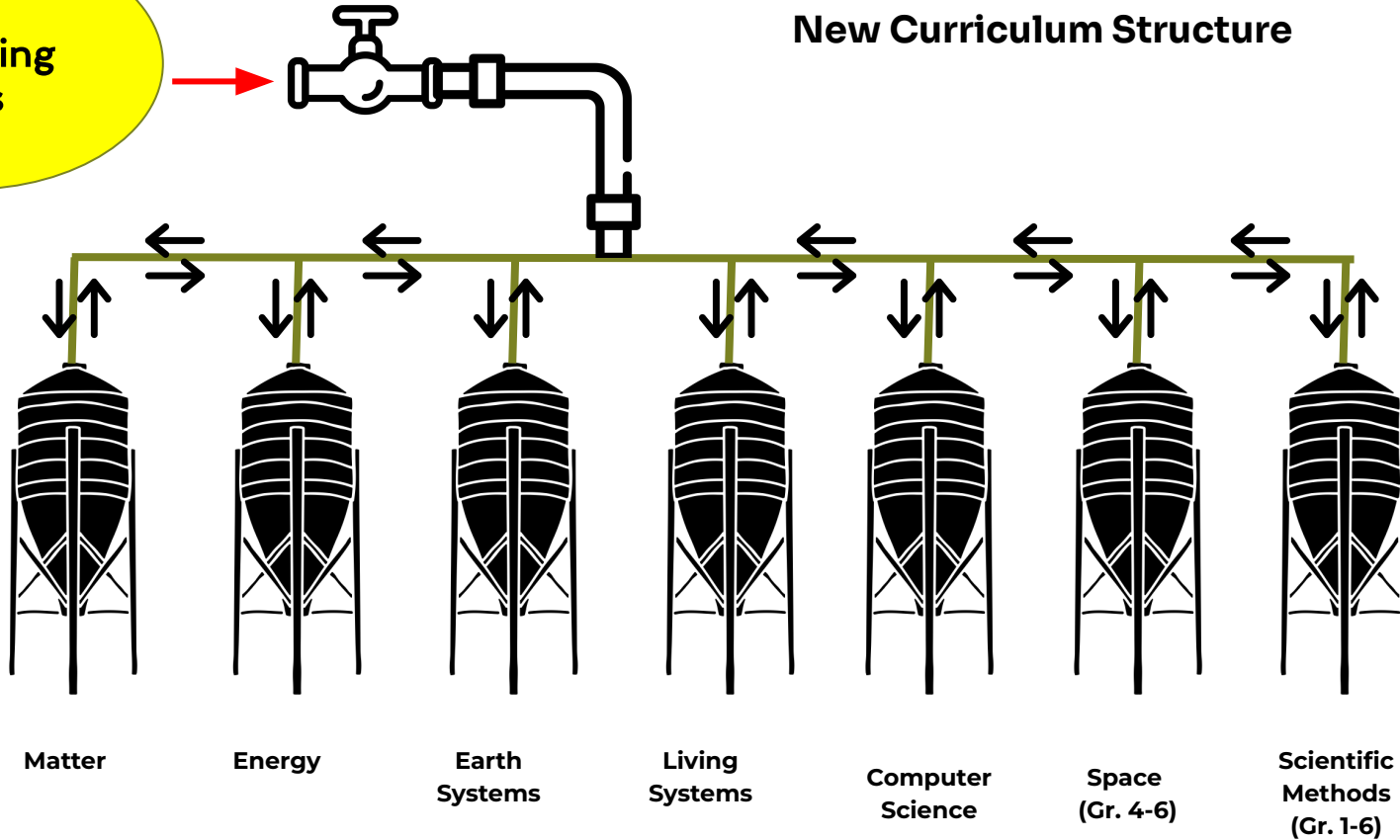
Sky Science

Evidence and
Investigation

Trees and Forests

**Organizing
Ideas**

New Curriculum Structure





What's In The New Curriculum?

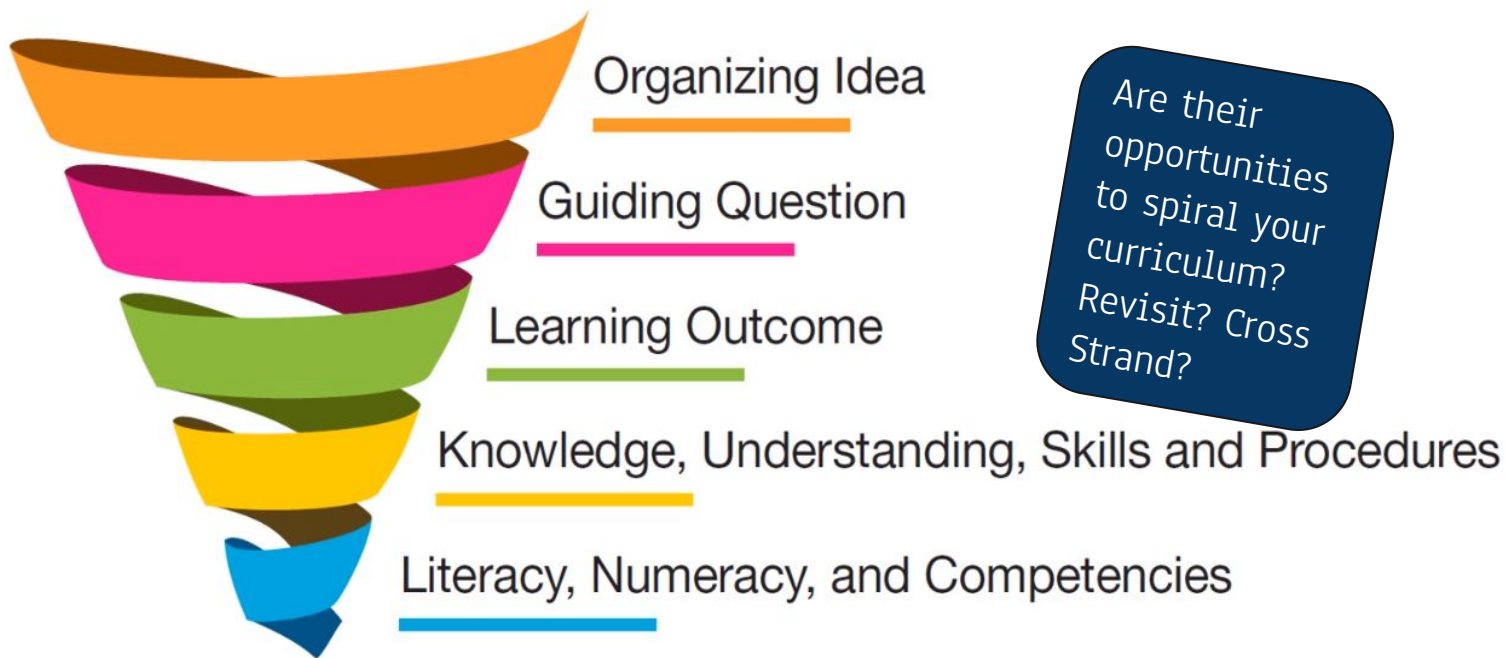
K-6 Organizing Ideas

[Science Curriculum Summaries.pdf](#)

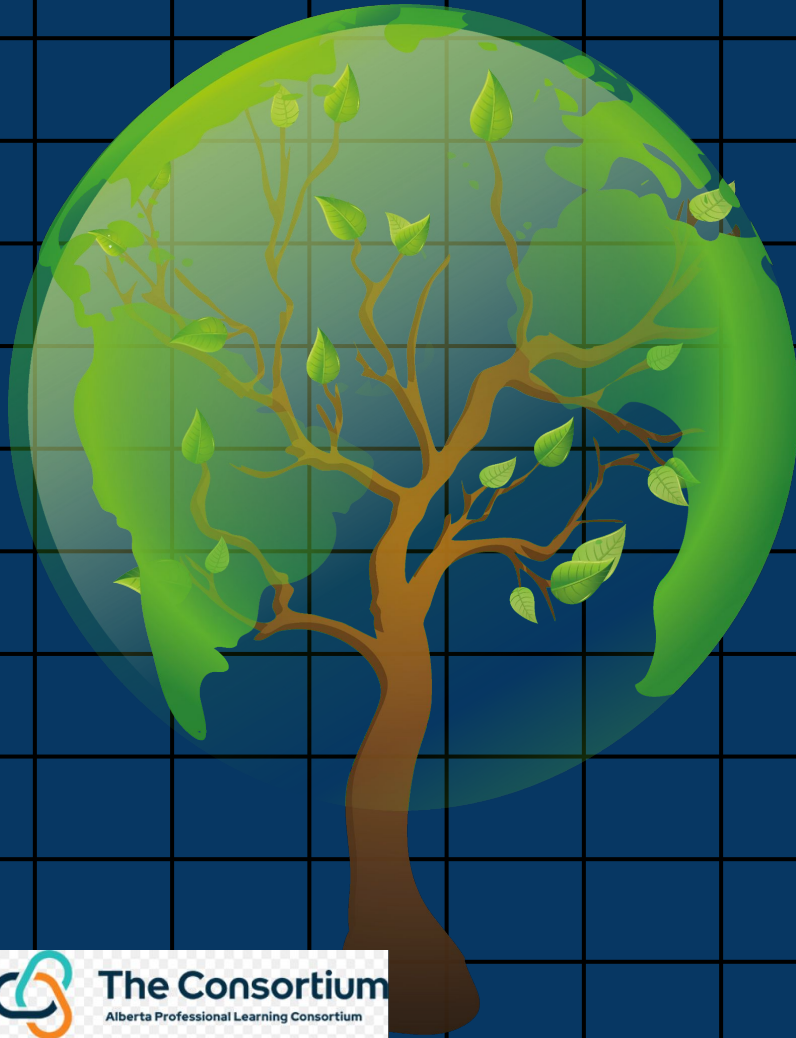


Architecture of the

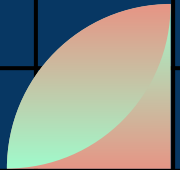
New Curriculum



Are their
opportunities
to spiral your
curriculum?
Revisit? Cross
Strand?



Organizing Ideas





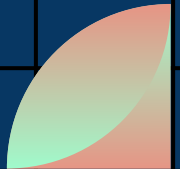
KUSPs

Knowledge

Understanding

Skills & **P**rocedures

Knowledge



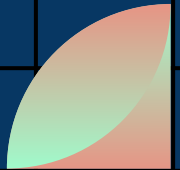
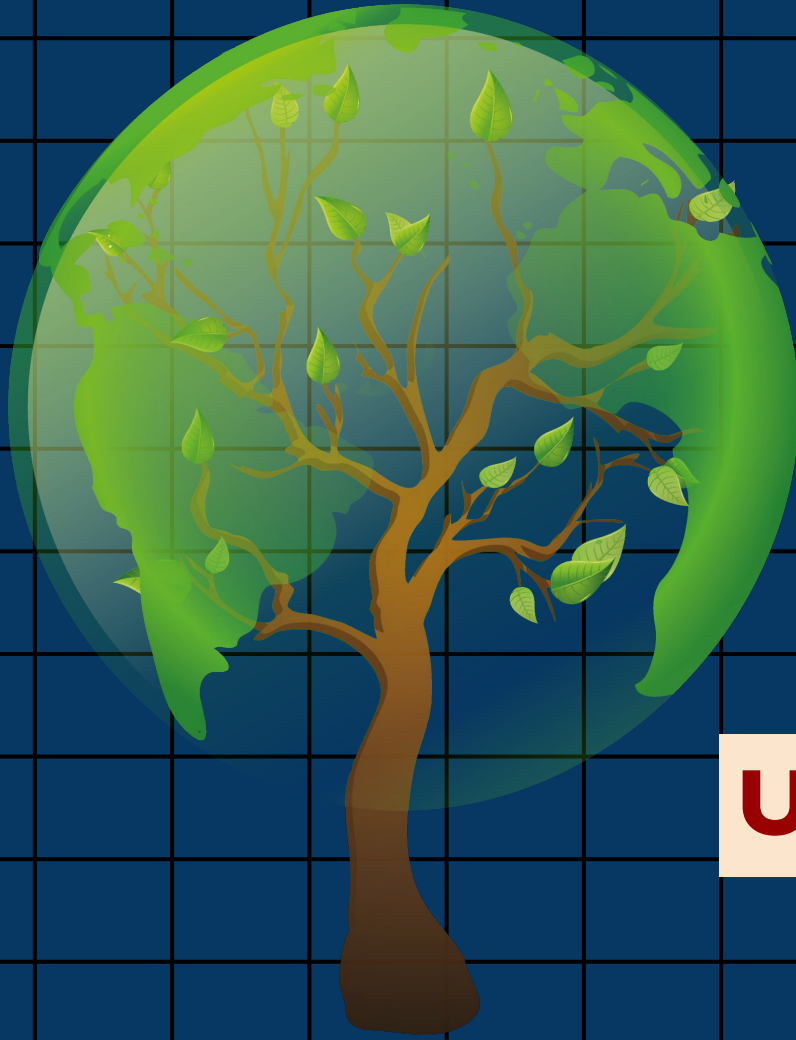
KUSPs

Knowledge

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Skills & **P**rocedures

Understanding



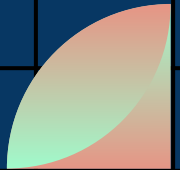
KUSPs

Knowledge

Understanding

Skills & **P**rocedures

**Skills &
Procedures**



"Begin with the end in mind."

- Stephen Covey



Photo by [Heidi Fin](#) on [Unsplash](#)

Phases of Learning

See Ted Zarowny's Introductory recording and resources, Aug 19, 2024

SURFACE

"Surface level learning occurs when students gain intellectual understanding of the concepts, terms, skills, facts, and vocabulary of a topic"

DoK level 1

DEEP

Deep learning occurs when students

- build larger schemas of organized understanding;
- build increased self-regulation and self-talk;
- apply understanding to many contexts that are similar, but new.

DoK level 2 & 3

TRANSFER

"Transfer of learning occurs when students apply these connections to **new** situations." DoK levels 3 & 4

Navigating the Numbered Outcomes Document

Organizing Idea		Living Systems: Understandings of the living world, Earth, and space are deepened by investigating natural systems and their interactions.				
Guiding Question		How are organisms supported by vital biological processes and systems?		In what ways are ecosystems complex?		
Learning Outcome		5 LS 1.1 Students investigate the internal systems of organisms and explain how they support biological processes.		6 LS 1.1 Students investigate the characteristics and components of and interactions within ecosystems.		
	Knowledge	Understanding	Skills & Procedures	Knowledge	Understanding	Skills & Procedures
	<p>Vital biological processes in complex organisms are carried out by biological systems that rely on each other.</p> <p>Vital biological processes of complex organisms include</p> <ul style="list-style-type: none">• movement• nutrition• respiration• growth• reproduction <p>Humans and many other animals have internal biological systems that include the</p> <ul style="list-style-type: none">• digestive system• respiratory system• circulatory system• musculoskeletal system <p>The digestive system breaks down food and absorbs nutrients, and includes the mouth, stomach, intestines, liver, and pancreas.</p> <p>The respiratory system exchanges oxygen and carbon dioxide, and includes the</p>	<p>Humans are complex organisms with biological systems that carry out vital biological processes.</p>	<p>Relate vital biological processes to a human or other animal's internal biological systems.</p> <p>Examine the function of the human digestive, respiratory, circulatory, and musculoskeletal systems.</p> <p>Identify the digestive, respiratory, circulatory, and musculoskeletal systems of the human body and the major body parts of each system.</p> <p>Investigate the relationships between body systems that are involved in moving oxygen and nutrients throughout the human body.</p>	<p>Ecosystems are complex systems of biotic and abiotic components.</p> <p>Biotic components of an ecosystem include plants, animals, and micro- organisms.</p> <p>Abiotic components of an ecosystem include</p> <ul style="list-style-type: none">• energy from the Sun• water• soil• air• temperature <p>All components of an ecosystem influence each other either directly or indirectly; e.g.,</p> <ul style="list-style-type: none">• animals rely on plants for food• plants need water to grow• energy from the Sun affects temperature• decomposers help return nutrients to the soil <p>There are many types of ecosystems, such as</p> <ul style="list-style-type: none">• desert• arctic• grassland• wetland• forest	<p>The components and characteristics of an ecosystem affect the diversity of the organisms that live in it.</p>	<p>Represent and connect the biotic and abiotic components of an ecosystem.</p> <p>Locate and responsibly examine a local ecosystem in nature using appropriate materials and tools.</p> <p>Relate the preservation of various ecosystems to possible actions that address climate change.</p> <p>Create a model or simulation to represent a chosen ecosystem and its characteristics.</p> <p>Compare the characteristics of two ecosystems.</p> <p>Examine the diversity of animals and plants in various ecosystems in relation to abiotic components.</p>

	Grade 5			Grade 6		
Guiding Question	How are organisms supported by vital biological processes and systems?			In what ways are ecosystems complex?		
Learning Outcome	5 LS 1.2 Students investigate the internal systems of organisms and explain how they support biological processes.			6 LS 1.2 Students investigate the characteristics and components of and interactions within ecosystems.s.		
	<p>Plant transport systems include xylem and phloem.</p> <p>Xylem and phloem in plants perform similar functions to the circulatory system in animals.</p> <p>Xylem transports water and nutrients from the roots to the rest of the plant.</p> <p>Phloem transports sugars from the leaves to the rest of the plant.</p>	Plants are complex organisms with transport systems that carry out specific functions for survival..	Examine the transport systems of plants and describe their functions	<p>Plants carry out the process of photosynthesis, which uses light, water, and carbon dioxide to produce oxygen and food in the form of sugar (glucose).</p> <p>Plants and animals use food produced during photosynthesis to perform vital biological processes.</p> <p>Plants and animals use the oxygen that is released during photosynthesis for respiration.</p> <p>Chlorophyll in plants collects light needed for photosynthesis.</p> <p>The release of oxygen and the presence of starch indicate that a plant has been photosynthesizing.</p> <p>Sugar produced by plants through photosynthesis is often stored as starch.</p>	<p>Photosynthesis is a process that supports growth and survival in a variety of ecosystems.</p>	<p>Explain the process of photosynthesis and its importance in an ecosystem.</p> <p>Design and perform a controlled experiment to demonstrate the importance of light to photosynthesis.</p> <p>Design and perform a controlled experiment to show that a plant is releasing oxygen.</p> <p>Design and perform a controlled experiment to show that a plant contains starch.</p>

Year Plan - Scope and Sequence - note the date of 'update'

Concept Progressions

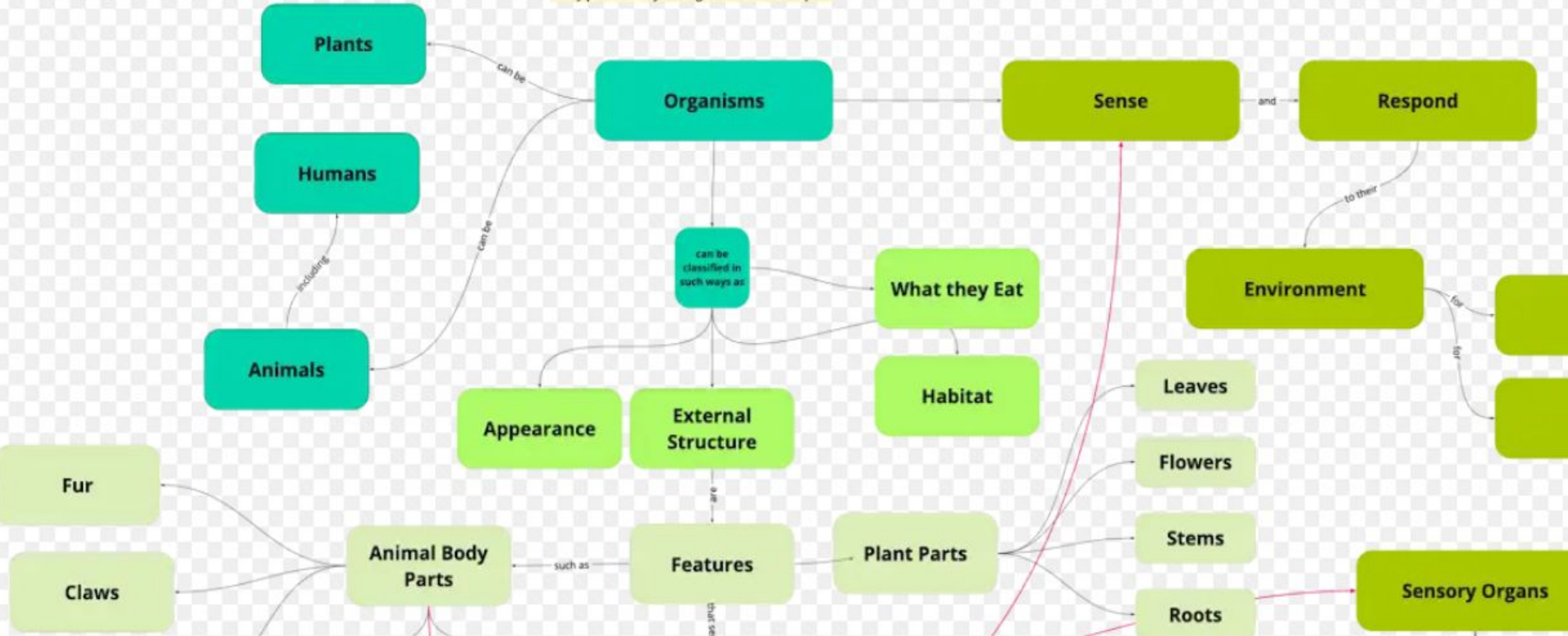
Science Curriculum (March 2023)

Kindergarten to Grade 6

LIVING SYSTEMS						
Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6
	Guiding Question: <i>How do plants and animals survive?</i>	Guiding Question: <i>How do plants and animals grow?</i>	Guiding Question: <i>How do plants and animals interact?</i>	Guiding Question: <i>In what ways do the structures of organisms support their survival?</i>	Guiding Question: <i>How are organisms supported by biological processes and systems?</i>	Guiding Question: <i>In what ways are ecosystems complex?</i>
	Learning Outcome: <i>Students investigate and examine needs of plants and animals.</i>	Learning Outcome: <i>Students investigate the growth and development of plants and animals and consider their relationship to humans.</i>	Learning Outcome: <i>Students analyze and describe how plants and animals interact with each other and with the environment.</i>	Learning Outcome: <i>Students analyze organisms and relate their external structures to functions.</i>	Learning Outcome: <i>Students investigate the internal systems of organisms and explain how they support biological processes.</i>	Learning Outcome: <i>Students investigate the characteristics and components of ecosystems.</i>
	KEY CONCEPTS			KEY CONCEPTS		
	Animals	Animal	Carnivore Herbivore Omnivore	External Structure	Biological Systems	Components: Abiotic & Biotic
	Dependence	Behaviour: Human	Classification	Function	Organism: Complex	Diversity
	Environment	Development	Environmental Protection	Microorganism	Biological Processes	Ecosystem Types
	Living Things	Development: Stage	FNMI Knowledge of Plants and Animals	Organism	Biological Systems: Animals: Internal	Ecosystem & Diversity
	Needs	Effect: Positive, Negative	Food Chain	Sensory Structure	Digestive Respiratory Circulatory Musculoskeletal	Ecosystem: Characteristics
	Plants	FNMI Relationship to Land	Interaction	Structure	Biological Systems: Animals: Transport Systems	Ecosystem: Components
	Similarity	Life Cycle	Stimuli		Xylem	Ecosystem: Greenhouse Gas Storage
	Difference	Offspring	Stimuli Response		Phloem	Ecosystem: Role: Plants
	Humans	Pattern	Survival			FNMI: Sacred Plants
	Diversity	Plant	FNMI: Respectful interaction with natural materials.			Interdependence - Relationships
		Relationship	FNMI: Plant and animal behaviours and patterns			Interdependence: Plants and Animals
		Relationship to Land				Organisms
		Stages of Development				Photosynthesis
						Photosynthesis: Chlorophyll

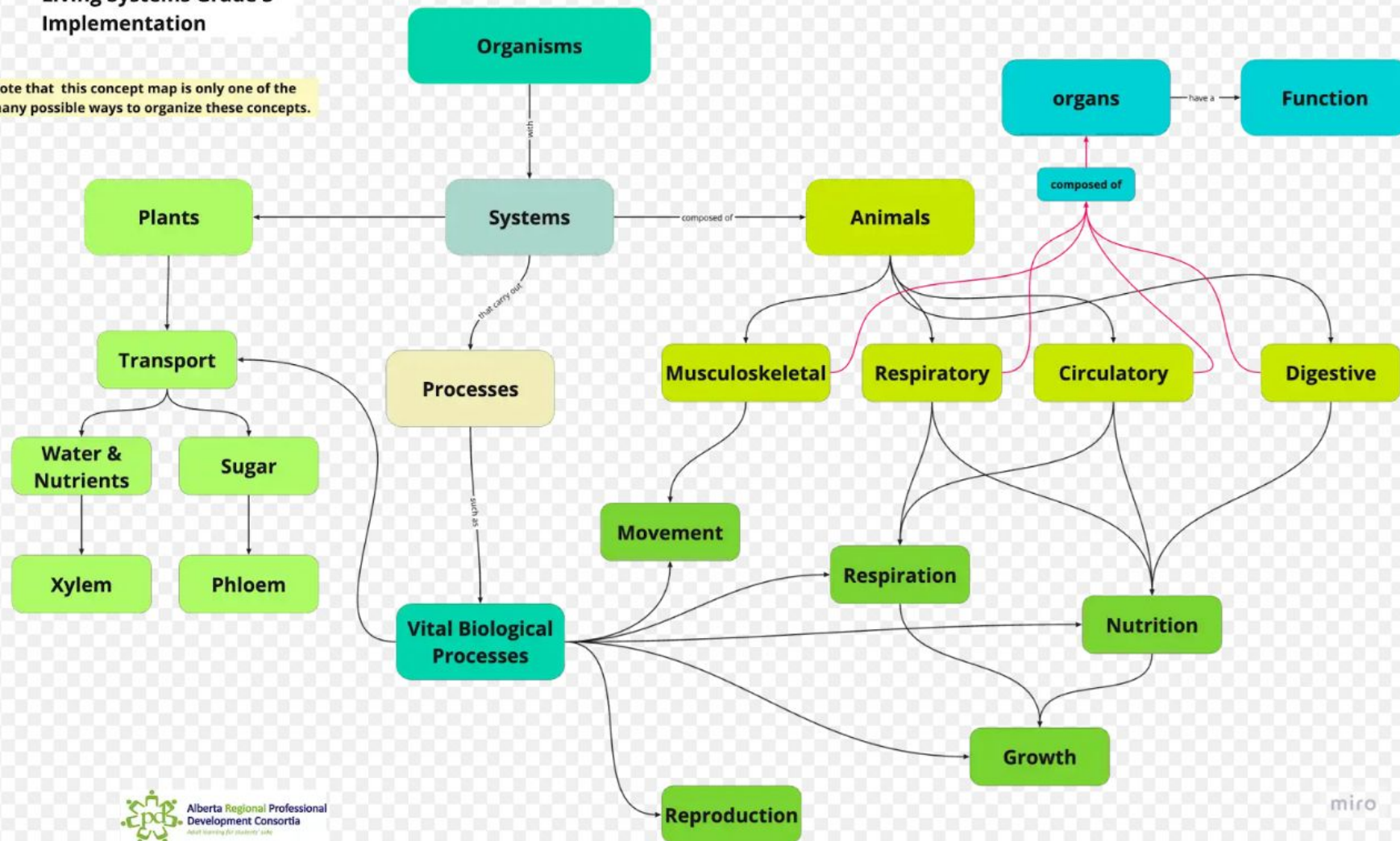
Living Systems Grade 4 Implementation

Note that this concept map is only one of the many possible ways to organize these concepts.

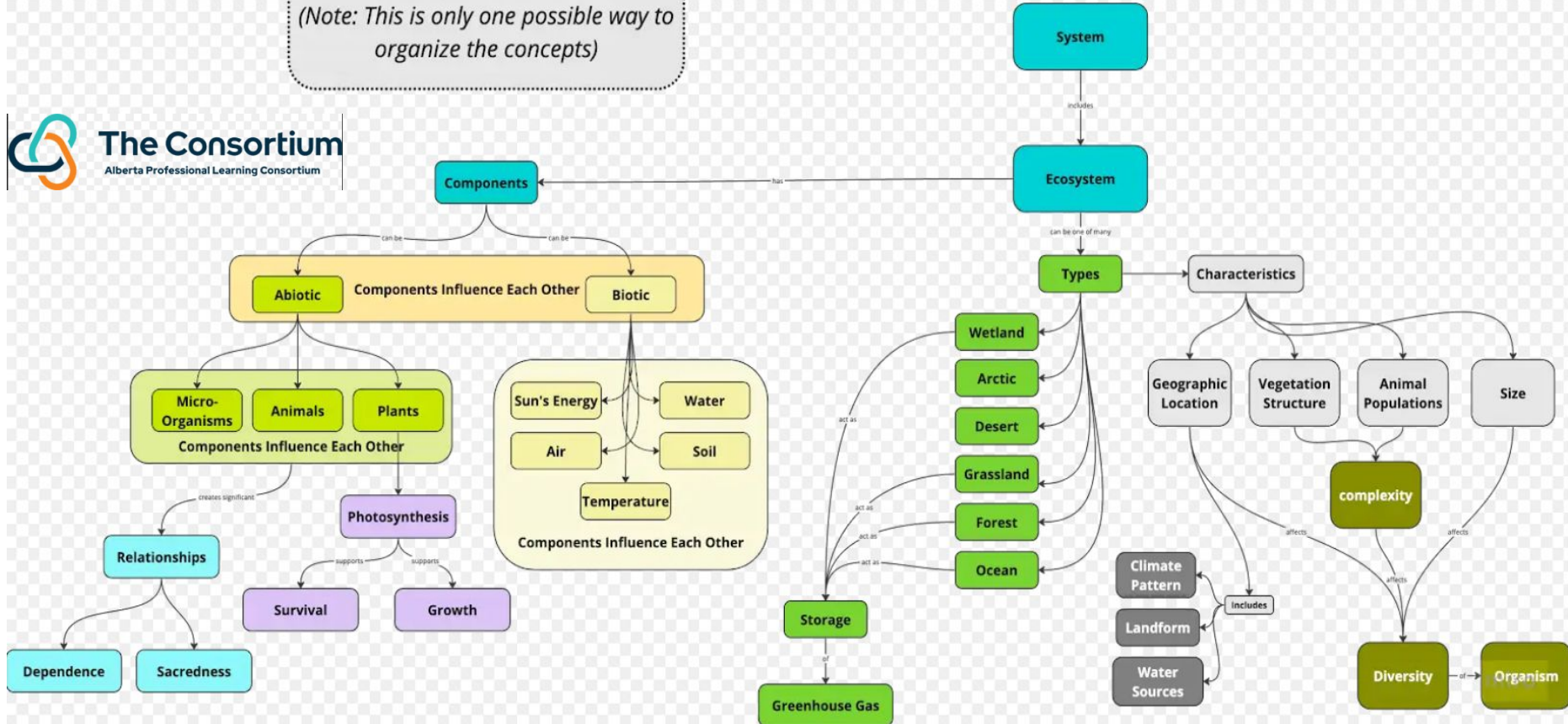


Living Systems Grade 5 Implementation

Note that this concept map is only one of the many possible ways to organize these concepts.



Living Systems Grade 6
(Note: This is only one possible way to organize the concepts)





Download Resource Files



Presentation Slide Deck



Additional Slide Decks



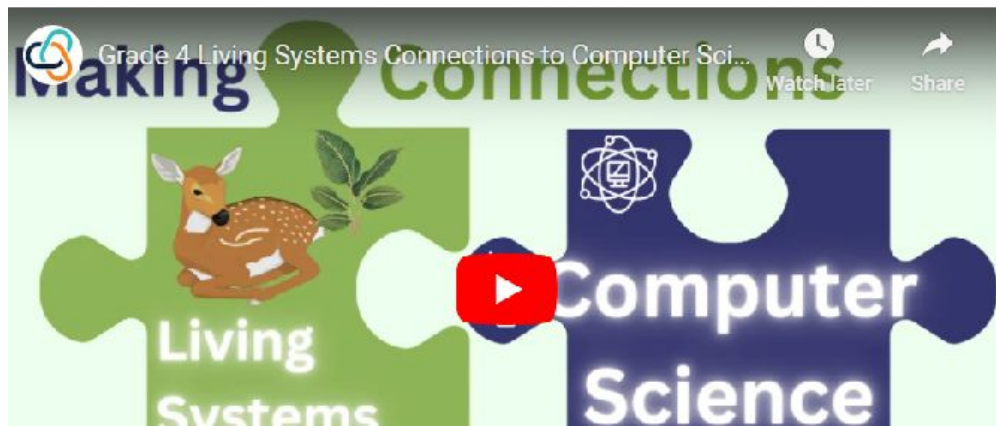
Resources and Activities



Making Connections - Computer Science

Session 2 Gr 4 LS
Presentation

Card Sort
Pictures
List



Sample Surface Level Activities to Introduce Concepts

- Change (Introduction)
 - Change and Time
 - Criteria
 - Significant Change
 - Positive/Negative Statements
- Cycle & Repeating Pattern
- Divergent Thinking
- Diversity
- Environment
- Exploration
- Food Chain
- Growth and Development
- Human Activity
- Investigation (From Grade 2 Scientific Methods)
 - Asking Questions (Notice and Wonder)
 - Observing (Using senses)
 - Analyzing
 - Prediction and Predicting
 - Conclusion
 - Sample Introduction to Research as an Investigation
- Landforms
 - Landform Images
- Materials
- Originality
- Relationship
 - Concept Map
 - Cause and Effect
 - Dependence
 - Affect/Effect
 - Interaction
- Representation

The Concept Project

Deep Level: Some Instructional Strategies (Understandings)

Concept Maps	A concept map is a visual or graphic way to represent knowledge or ideas and the relationships and connections between various concepts. What is a Relationship? What is a Concept Map? Example
Hexagonal Thinking	Hexagonal has students make connections between concepts, ideas, or themes using hexagon-shaped tiles. (Example)
Concept Graph	Students sort or create examples across two concept axes on a graph. They justify their arrangement. (Example)
Discussion	<p>Discussion is one of the most frequently appearing verbs in the K-6 Science Curriculum Skills and Procedures. What is a Discussion? - Surface Level (Div. II Discussion Checklist)</p> <p>Decision Formats: Think - Pair - Share Claim - Support - Question Many Others!</p>
Guided Inquiry/Guided Investigations/Project Based Learning	<p>Guided inquiry, investigations, and project based learning is when the teacher provides a structured framework for learning, while students actively explore and investigate a topic or problem. Each step of the inquiry/investigation is pre-planned by the teacher, or developed with teacher guidance. Students typically inquire or investigate authentic scenarios.</p> <p>These experience can last for one to several class periods.</p>
Case Studies	Case studies are the use of that real-world or simulated scenarios (cases) to have students apply their understandings and skills.

Deep Level: Some Instructional Strategies (Understandings)

I Used To Think ... Now I Think	This strategy helps students to reflect on their thinking about a topic or issue and explore how and why their thinking has changed. It helps consolidate new learning. (Link: I Used To Think... Now I Think)
What I Know, What I Want to Know, What I Learned (KWL)	KWL Charts

Curriculum Architecture

Skills & Procedures

Science Kindergarten to Grade 6 Curriculum

“Skills and procedures are what **students do to demonstrate their knowledge and understanding**. They are **specific** skills, methods, tools, strategies, and processes that students will develop as they achieve the learning outcome.” (Alberta Education. *The Guiding Framework*. 2020)

Grade 3				Grade 4		
Organizing Idea	Matter: Understandings of the physical world are deepened by investigating matter and energy.					
Guiding Question	How can materials change?			How can materials be managed safely?		
Learning Outcome	Students investigate and analyze how materials have the potential to be changed.			Students investigate the management of waste and dangerous materials and describe environmental impacts.		
	Knowledge	Understanding	Skills & Procedures	Knowledge	Understanding	Skills & Procedures
	<p>Processed materials are modified from natural materials and do not occur in nature.</p> <p>Processed materials are designed and manufactured for a specific purpose.</p> <p>First Nations, Métis, and Inuit communities respectfully interact with natural materials, such as</p> <ul style="list-style-type: none">• trees• rocks• ice• shells• plants• animals <p>First Nations, Métis, and Inuit communities interact with natural materials for specific purposes, such as</p> <ul style="list-style-type: none">• teepees• igloos• medicines• clothing• transportation• ceremonies	<p>Materials can be used in their natural form or processed to create new materials.</p> <p>Interaction with natural materials by First Nations, Métis, and Inuit is guided through living in harmony and balance with the land.</p> <p>Relate</p> <p>Discuss</p>	<p>Relate a processed material to the natural material from which it originated.</p> <p>Discuss how interaction with natural materials is guided by relationships with the land for First Nations, Métis, and Inuit communities.</p>	<p>Methods of waste management that can negatively impact the environment include using landfills and burning.</p> <p>Methods of waste management that can reduce negative environmental impacts include</p> <ul style="list-style-type: none">• reducing• reusing• recycling• repurposing• repairing• composting <p>Increased production and consumption of materials leads to increased production of waste materials.</p> <p>Waste materials may be solids, liquids, or gases.</p>	<p>Responsible methods of waste management can reduce negative environmental impacts.</p> <p>Compare</p> <p>Design</p> <p>Discuss</p> <p>Represent</p>	<p>Compare the different methods of waste management and discuss their environmental impacts.</p> <p>Develop a personal plan to reduce waste.</p> <p>Discuss local waste management programs.</p> <p>Represent a recycling process using diagrams.</p>

Skills & Procedures

What Students Do to
Demonstrate their
Knowledge and
Understanding

Grade 4-6 Skills and Procedure Verbs			
Skill/Procedure	Frequency	Skill/Procedure	Frequency
Discuss	30	Observe	3
Relate	22	Safety	3
Compare	20	Analyze	2
Investigation/Experiment	17	Collect Data	2
Examine	13	Record Observations	2
Explain	12	Measure	2
Identify	12	Test	2
Describe	11	Conclude	1
Represent	9	Decide	1
Create	6	Magnetize	1
Demonstrate	5	Test	1
Interpret	5	Construct Weather map	1
Design	5	Defend	1
Collaborate	4	Translate	1
Evaluate	4	Divergent Thinking	1
Explore	4	Hypothesize	1
Apply	3	Order	1
Classify	3	Predict	1
Plan	3	Research	1
Observe	3	Use tools	1

Grade 4-6 Skills and Procedure Verbs

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Evaluate	4	Divergent Thinking	1
Explore	4	Hypothesize	1
Apply	3	Order	1
Classify	3	Predict	1
Plan	3	Research	1
Observe	3	Use tools	1

Skills & Process Verbs

	Grade			
	K	1	2	3
Ask Questions				
Classify (Sort)				
Compare & Contrast				
Conclude				
Create				
Demonstrate Safety				
Describe				
Design				
Discuss				
Examine				
Explain				
Explore				
Investigate				
Observe				
Predict				
Record Data				
Relate				
Represent				



Skills From Scientific Methods

Investigation Progression

- The steps of an investigation are introduced in **Grade 2 Scientific Methods**.
- **Grades 3, 4, 5 and 6** build on those steps.

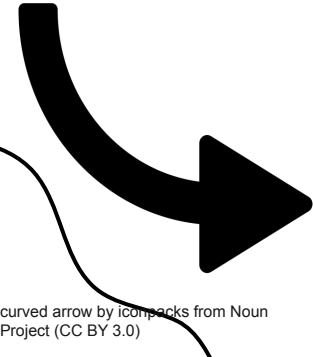
Nicole Lamoureux: Aug, 20 (8:30 -10:00)



Photo by [National Cancer Institute](#) on [Unsplash](#)

Investigations 1-6 Progression				
The information presented here is not intended to be a detailed summary of the Scientific Methods Organizing Idea. The intent is to highlight how the <u>steps of an investigation</u> grow in complexity and depth from Grade 1 to Grade 6				
Grade 1	Grade 3	Grade 4	Grade 5	GRADE 6
Steps followed during an investigation include: <ol style="list-style-type: none"> 1) Asking Questions 2) Making Predictions 3) Gathering Data 4) Forming Conclusions 	Data <ul style="list-style-type: none"> • Accuracy • Objectivity • Sources (Accurate & Trustworthy) Analyzing <ul style="list-style-type: none"> • Techniques 	Data <ul style="list-style-type: none"> • Descriptive (qualitative) • Numbers (quantitative) • Relevance Evidence <ul style="list-style-type: none"> • Data that supports the conclusion becomes evidence • Reliability • Validity Système international d'unités <ul style="list-style-type: none"> • international system of units 	Phenomena <ul style="list-style-type: none"> • facts or events that can be observed Bias Variables <ul style="list-style-type: none"> • Manipulated (independent) • Responding (dependent) • Controlled Experiment <ul style="list-style-type: none"> • Controlled Experiment Evidence Communication <ul style="list-style-type: none"> • Representation • Clarity & Accuracy Scientific Ethics	Explanations <ul style="list-style-type: none"> • Hypothesis • Testable (falsifiable) • Use of reliable objective data and evidence • Describe natural phenomena • Use of variety of texts and representations
Grade 2				
Procedures scientists use to guide investigations include: <ol style="list-style-type: none"> 1) Asking Questions 2) Making Predictions 3) Planning the Investigation 4) Observing and Recording Data 5) Analyzing Data 6) Reaching Conclusions 7) Discussing Observations and Conclusions 				

[Investigation Steps Grades 2 - 6 \(Link\)](#)



Review Nicole Lamoureux's Session on Scientific Method August 20, 2024

Transferable Skills From Computer Science

Angela Dearing: Aug, 20 (10:30 -12:00)

Grade	Skills
K-1	Following/ Creating Instructions (algorithmic thinking)
2	Creativity - Originality
3	<ul style="list-style-type: none">• Creativity - Divergent Thinking• Computational Thinking - Introduction
4	Design Thinking
5	Design Thinking - Creating Artifacts
6	Computational Thinking - Abstraction

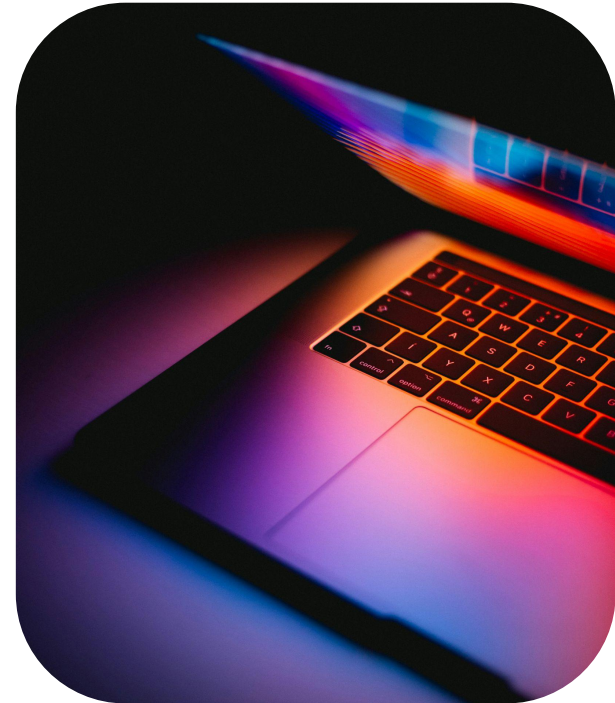


Photo by [Andras Vas](#) on [Unsplash](#)

Sub-Skills

Break a task into smaller chunks.

(Decomposition)

Identify the important details when reading or solving a problem.

(Abstraction)

Find patterns and similarities in tasks.

(Pattern Recognition)

Design instructions.

(Algorithmic Thinking)

Working backward if a mistake is made. **(Debugging)**

Computational Thinking Skills

Sub-Skills

Understand the Problem

Form Ideas (*Divergent Thinking*)

Plan

Create

Analyze

Test

Troubleshoot

Design Thinking

A Problem-Solving Approach

See Angela Dearing's session recordings and shared resource from August 20, 2024

Phases of Learning

Surface

- Initial learning of **concepts**, terms, **skills**, **facts**, and vocabulary of a topic

Deep

- Relating concepts
- Applying to different contexts
- Teacher feedback and guidance
- Reflecting

Transfer

- Apply concepts, understandings and skills to a variety of novel and **unfamiliar contexts with independence**

Transfer Activity: Inquiry / Problem Based Learning

As you watch the video, try to determine what concepts and skills were likely taught at the surface level, and what was deepened before the inquiry project occurred.



Video: Inquiry-Based Learning in the Science Classroom

Cheryl Babin: PBL 10:30 - 12:00

CPAR Documents

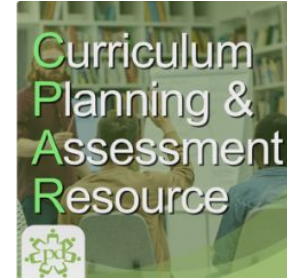


DRAFT Documents - yellow highlights not updated

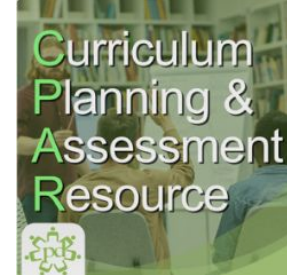
Living Systems Grade 4 CPAR

Living Systems Grade 5 CPAR

Living Systems Grade 6 CPAR



**Computing
Science CPARs**

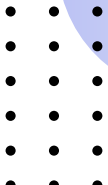


**K-3 Science
CPARs**



ARPDC.ab.ca - let's search for one and check out the site.

Introductory Video to Implementing the New Science Program - A must see before starting!

Math CPARs - best to search by Grade




Introducing Karen Blumhagen Gizmo Instructor Extraordinaire!

Make Science Come Alive with Gizmos Science 4-6

ExploreLearning Gizmos are virtual math and science simulations that bring powerful interactive learning experiences to the classroom. Encourage curiosity and wonder in Grades 4-6 Science using online simulations. Deepen conceptual understanding with inquiry-based activities that create opportunities for students to ask questions, see results and draw conclusions.

Hosted by ARPDC




Gizmos: Build Conceptual Understanding with Online Simulations that Support the New Grades 4-6 Science Curriculum

In this webinar, you will:

- experience an interactive modelled Gizmos lesson that highlights best practices for teaching with online simulations
- explore curriculum-aligned science simulations, teacher guides, and lesson materials
- learn how to navigate the teacher dashboard and set up your class

To register for the session, click the date and time below that works best for you!

Grade 4	Grade 5	Grade 6	Grades 4-6
September 19 2:45 - 3:45 pm 4:00 - 5:00 pm	September 26 2:45 - 3:45 pm 4:00 - 5:00 pm	October 3 2:45 - 3:45 pm 4:00 - 5:00 pm	October 10 2:45 - 3:45 pm 4:00 - 5:00 pm
September 25 4:00 - 5:00 pm	October 2 4:00 - 5:00 pm	October 9 4:00 - 5:00 pm	October 16 4:00 - 5:00 pm



K - 6 teachers in Alberta have access to Gizmos through a subscription provided by Alberta Education.

For more information about learning opportunities, visit the [Alberta Gizmos Site](#).

All sessions are offered at no cost to teachers, schools or school divisions in Alberta.


Page 1 / 2

For more information about Gizmos, contact: [Gizmos Support](#)

[Link](#)

Énergisez vos cours de Sciences avec les Gizmos!

Les Gizmos d'ExploreLearning sont des simulations virtuelles de mathématiques et de sciences qui apportent des expériences d'apprentissage interactives riches en classe. Les Gizmos injectent enquête et interactivité dans chaque expérience d'apprentissage. Les élèves apprennent le quoi et le pourquoi d'un sujet en posant des questions, obtenant des résultats et en tirant des conclusions.



Sessions de formation offertes par ARPDC

Les simulations Gizmos disponibles en ligne: pour appuyer le nouveau curriculum de Sciences 4e à 6e

La session vous préparera à utiliser les Gizmos immédiatement en classe. Vous

- explorerez des simulations alignées avec le curriculum.
- visitez les guides d'enseignement et le matériel de cours
- apprendrez à naviguer dans le tableau de bord de l'enseignant et à configurer votre classe.

Pour vous inscrire à une session, cliquez sur la date qui vous convient le mieux:

27 août	Sciences 4e à 6e	4:00 - 5:00 pm
19 septembre	Sciences 4e à 6e	4:00 - 5:00 pm
2 octobre	Sciences 4e à 6e	4:00 - 5:00 pm
16 octobre	Sciences 4e à 6e	4:00 - 5:00 pm

Les webinaires sont présentés par Renée Michaud.

Programmation offerte gratuitement par les consortiums régionaux de perfectionnement professionnel de l'Alberta (ARPDC).

[Link](#)

Explor^elearning®

Gizmos!

Online Simulations for Math and Science Aligned to the Alberta Curriculum

Karen Blumhagen

Implementation Coordinator



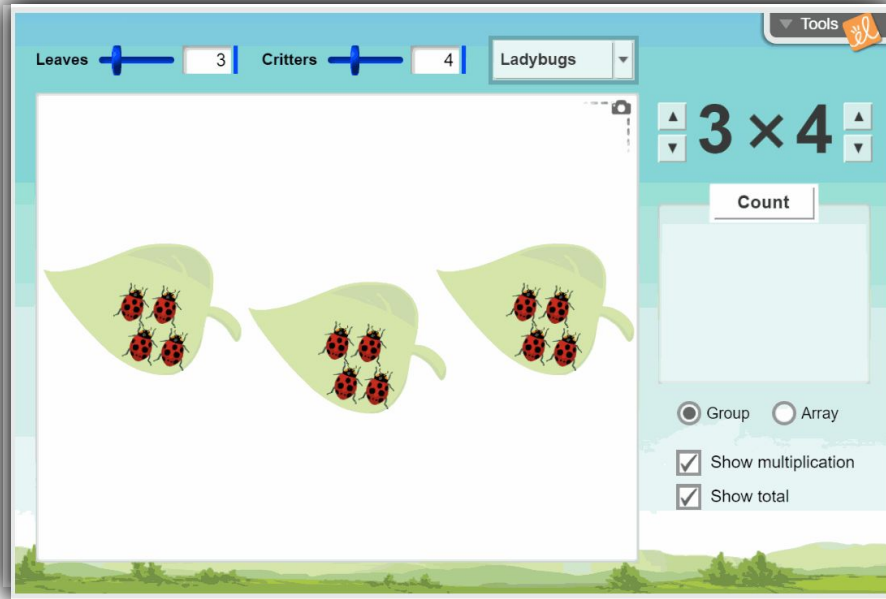
You've Got Gizmos!

- Authorized resource to support the implementation of the new K-6 math and science curricula
- 140 Gizmos on [New Learn Alberta](#) website
- Additional access to 500 simulations and supplementary materials on the [ExploreLearning](#) Gizmos site

ExploreLearning®



What are Gizmos?



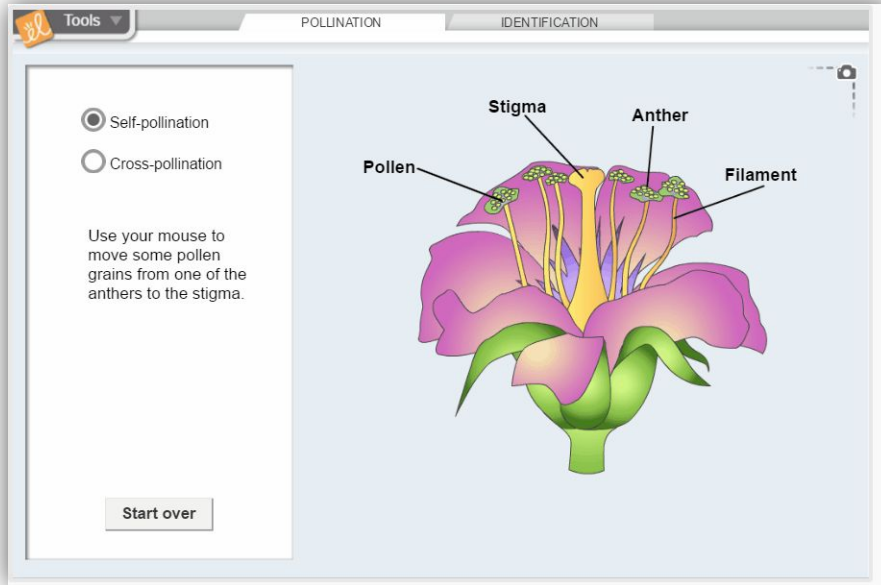
**Math &
Science**
Content and
Skills

Interactive Online
Simulations
Grades 3-12
Customized for K-2

A FUN way to
LEARN and build
LASTING
knowledge!

Aligned to Curriculum

Flower Pollination

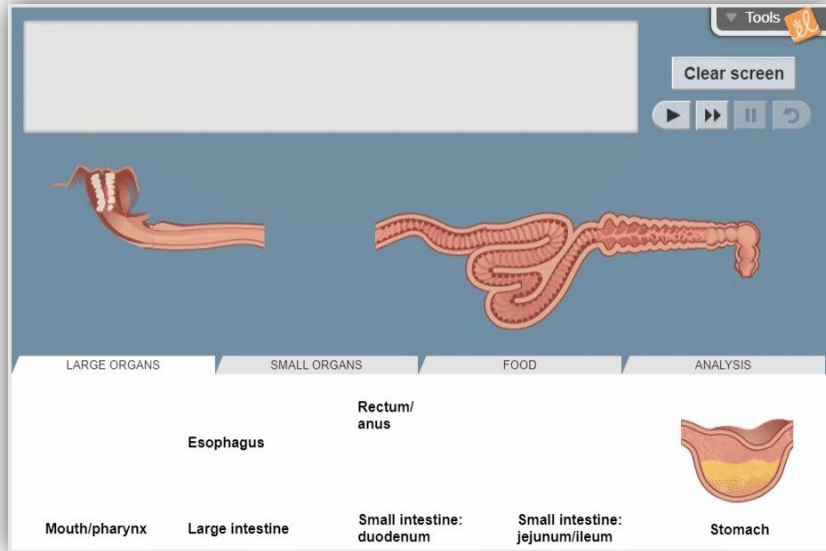


Grade 4 – Students analyze organisms and relate external structures to functions.



Aligned to Curriculum

Digestive System

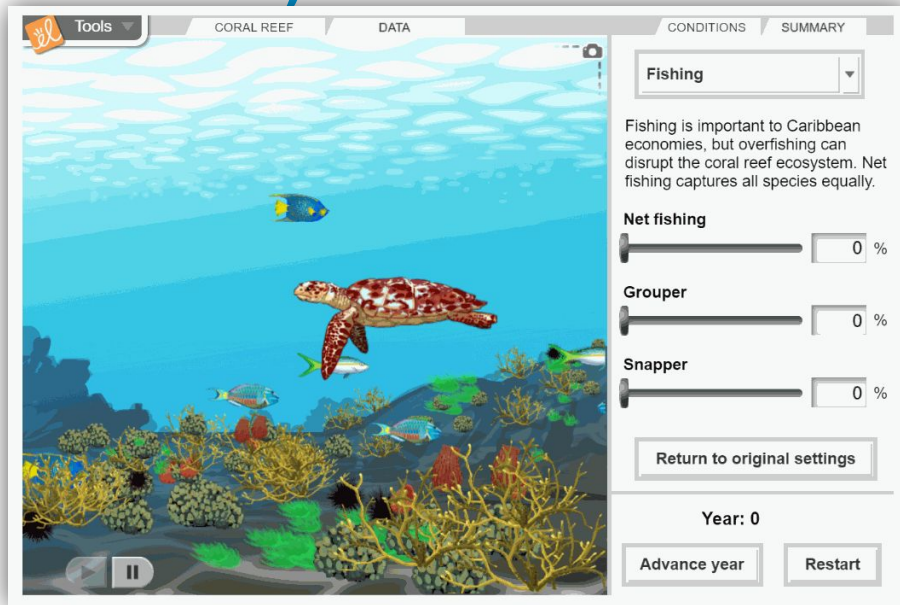


Grade 5 – Students investigate the internal systems of organisms and explain how they support vital biological processes.



Aligned to Curriculum

Coral Reefs 1 (Abiotic Factors)



Grade 6 – Students investigate the characteristics and components of and interactions within ecosystems.



Gizmo Lesson Materials



Gizmos

Teacher Guide: Seasons: Earth, Moon, and Sun



Learning Objectives

Students will ...

- Relate different units of time to astronomical events.
- Track the Sun's apparent path across the sky.
- Explain why sunrise and sunset times vary over the course of the year.
- Describe how latitude affects sunrise and sunset times.



Vocabulary

altitude, axis, azimuth, equinox, horizon, latitude, revolution, rotation, solstice



Lesson Overview

Why are there 24 hours in a day? Why do months last 28 to 31 days? Why are there 365 days in the year? These are all questions that students can explore using the *Earth, Moon, and Sun* Gizmo.



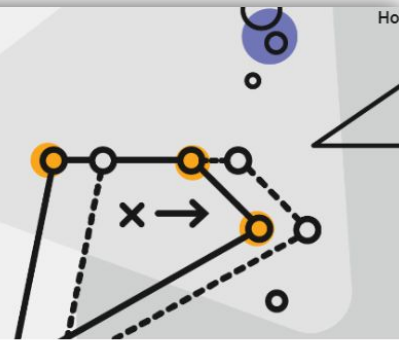
Alberta EL Gizmos Site

bit.ly/AlbertaGizmos

Explor^{el}earning® Alberta



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Alberta



Resources



RESOURCES IN ENGLISH

[New LearnAlberta](#)

[Quick Start Guide](#)

[K-6 Math Gizmos Alignments with Curriculum](#)



RESSOURCES EN FRANÇAIS

[New LearnAlberta](#)

[Guide de démarrage](#)

[M-6 Corrélation des Gizmos avec le Curriculum de math](#)

Professional Development & Supports

- Individual teacher supports
 - Schools, Divisions
 - Onsite PD
 - Online PD
 - APLC – webinars, onsite
 - ATA Conventions
- No co-teaching or sch

Learn More About Gizmos



Karen Blumhagen

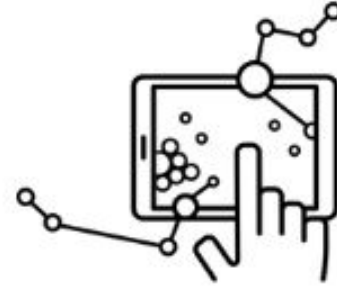
Implementation Coordinator

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Helpful Sites & Resources

New LearnAlberta

<https://curriculum.learnalberta.ca/home/en>

Alberta Regional Learning Consortium (ARPDG) Alberta Professional Learning Consortium (APLC)

<https://arpgc.ab.ca/>

Grade 4	Grade 5	Grade 6
Living Systems	Living Systems	Living Systems
Matter	Matter	Matter
Earth Systems	Earth Systems	Earth Systems
Energy	Energy	Energy
Space	Space	Space

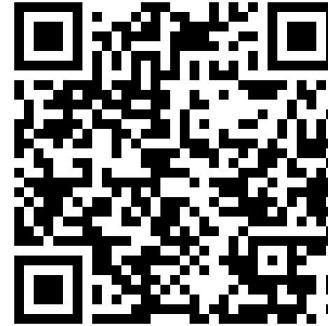
Look for upcoming learning activities to support implementation from APLC!

ARPDG Post Session Survey

Thank you for attending this session!

To help us enhance the delivery of future sessions, we ask that you complete this short survey. Your feedback is important and appreciated!

Note: Your survey will be submitted anonymously.



Survey Link

<https://arpgc.ab.ca/survey/?id=14255>

Questions?



Photo by [Simon Hurry](#) on [Unsplash](#)



The Consortium

Alberta Professional Learning Consortium

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CREDITS: This presentation template was created by **Slidesgo**, including icons by **Flaticon**, infographics & images by **Freepik**

APLC Summer Science Symposium

Day 3

August 21, 2024