Curriculum Planning & Assessment Resource

Science
Kindergarten: Matter

The Consortium

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About This Document

This Curriculum Planning & Assessment Resource is intended to be a collection of sample activities, assessments, and resources that teachers may wish to use as they develop their unit plans. This document is not intended to be a sequential list of activities. Rather, the intent is that teachers choose from this resource what is appropriate for their context, and sequence any chosen activities in their planning.

The sample activities, assessments and resources included in this document have undergone an initial review to determine appropriateness and alignment to the curriculum. However, it is expected that teachers use their professional judgment in selecting activities, assessments and resources that are appropriate for their context.

While every attempt has been made to provide credit and receive permissions, some errors or omissions may have occurred. Please contact info@aplc.ca to report any error or omissions.

Table of Contents

Important Links

New Learn Alberta Progressions
- Competency Progressions
- Numeracy Progressions
- Literacy Progressions

Recorded Video:
- How to Read these Curriculum Planning & Assessment Resources
- Unpacking Matter: Kindergarten

Planners and Concept Maps
- Science Planner
- Assessment Planner
- K-6 Action Verbs (EN)
  - Verbes des habiletés et procédures en sciences de M à 3
- Concept Map for Kindergarten: Matter
  - Cartes conceptuelles [Idée organisatrice]

Curriculum Progressions
- Science Skills and Procedures Progression K-3
  - Progressions des habiletés et procédures en science M à 6
- K-6 Science Concept Progressions
  - Progressions des concepts

Numbered Outcomes Document

Acknowledgements

Thank you to all the teachers, curriculum specialists, and technical expertise from Alberta school divisions and APLC who collaborated to develop, review, and revise these planning and assessment documents to support curriculum implementation.

INTRODUCTION

Organizing Idea

Matter: Understandings of the physical world are deepened by investigating matter and energy.

Guiding Question

How can properties of an object be distinguished from one another?

Learning Outcome

KM1 Children examine properties of objects.

Summative Assessment(s) - Transfer *(In Progress)*

Summative assessments can include the following.

- *Understanding/making sense of a novel context from the real world using one or more concepts (eg. "Is this an example of diversity?). Example*
- *Understanding/making sense of a novel context using one or more understandings (eg.Students watch a video or complete a case study and explain what they viewed/interpreted through the lens of the understanding).. **Example***
- *Being able to describe why (developing predictions or hypotheses) something is unfolding, or what might happen next using learned concepts and understandings.*
- *Apply learning (create products; undertake projects; taking action such as creating a campaign) in a novel context or taking action using the understanding(s). Example*
- *Construct arguments by taking a position on a novel issue and defending it with known understandings.*

Summative Assessments: Surface, Deep and Transfer Assessment

Sample Summative Assessment: This is one example of a summative assessment that may be used for this organizing idea.

Computer Science & Matter Connection	
• Introductory Video & Slide Deck **"Wait! What? I'm teaching Computer Science?"** ○ (Part 1) (Part 2)	• Exploring ECS Computer Science- Video and Slide Deck (42:18)
• Kindergarten Computer Science - Curriculum Planning & Assessment Resource.pdf	
• Integrating Computer Science & Grade Kindergarten Matter	
• Computer Science Organizing Idea KUSP cards - use these to help understand and integrate CS KUSPs throughout teaching and learning in Science and across curricula.	
• CS Unplugged - "Computer Science without a computer"	

Click to jump!

KUSPs	KM1						

Literature Connections

KUSPs KM1

Prerequisite Knowledge

- Students have meaning for the words seeing, touching, smelling, hearing, and tasting.
- Students recognize that objects around the room come in all shapes and sizes without knowing the term “objects”.

Misconceptions

- Students may believe that all animals have the same five senses and body parts as themselves.
- Students may believe that we can only touch with our hands.

Student Language | Essential Vocabulary & Concepts

- Description
- Difference
- Object
- Observation
- Property
- Sense
- Similarity

I Know Statements

- I know that an object is anything that can be perceived using one or more of the five senses.
- I know the five senses are sight, touch, hearing, smell & taste.
- I know that properties are distinctive characteristics.
- I know that properties of objects that can be perceived using one or more of the five senses include colour, size, shape, texture, temperature, sound, scent & taste.

I Can Statements | Skills

- I can explore properties of various objects using one or more of the five senses.
- I can describe properties of various objects.
- I can sort various objects according to properties.
- I can compare properties of various objects.

I Understand Statements

- I understand that objects have identifiable properties
- I understand that objects may be similar in one or more properties and different in another property.

Learning Outcome	**KM1: Children examine properties of objects.**			
Knowledge	**Understanding**	**Skills & Procedures**	**Sample Activities & Resources** **What is Surface, Deep and Transfer**	**Assessments (formative)**

An object is anything that can be perceived using one or more of the five senses.
 	
The five senses are
• sight
• touch
• hearing
• smell
• taste
 	
Properties are distinctive characteristics.
 	
Properties of objects that can be perceived using one or more of the five senses include
• colour; e.g., blue, yellow
• size; e.g., long, short
• shape; e.g., round, square
• texture; e.g., rough, smooth
• temperature; e.g., hot, cold
• sound; e.g., loud, quiet
• scent; e.g., fresh, rotten
• taste; e.g., sweet, sour
	Objects have identifiable properties	Explore properties of various objects using one or more of the five senses.
		
		Describe properties of various objects.
		
		Sort various objects according to properties.
			Sample Surface Level Activities
			Object | Property | Sense | Sort | Description
			
			• What is a Sort?
			  ○ Introduction to Sorting
			
			• Introduce the senses. Then have students complete a sort involving the senses.
			  ○ A variety of videos are available to introduce and explain the senses.
			  ■ Example Videos
			  • The Five Senses | The Dr. Binocs Show | Educational Videos For Kids - Peekaboo Kidz (4:04)
			  • THE 5 SENSES (catchy song for kids about "see, hear, smell, taste, touch") (3:47)
			  • Five Senses - The Kiboomers Kids Learning Songs For Circle Time - Body Parts Song (1:31)
			  ○ Senses Activity Sort - Source:KidPid (K4 Media & technologies - for Educational Use Only)
			  ○ Five Senses (Sensory Stations)
			  ○ Five Senses Identification (Cut and Paste)
			  ○ Properties of Objects Using 5 Senses
			
			• What is an Object?
			  ○ Object
			
			• What is a Property?
			  ○ Property
			  ○
			• What is an Observation
			  ○ Observing with the Senses
			
			• What is a Description?
			  ○ Description
			  ○ Description Words (Observable/Identifiable Properties)
			
			• What is an Exploration?
			  ○ Exploration
			  ○ Exploring by Noticing and Wondering
			
			--- 	
			
			Sample Deep Level Activities
			
			• Explore properties of various objects using one or more of the five senses.
			  ○ Gather sample objects for students that have a variety of observable properties. Students choose one and describe it.
			  ○ Explore the fences in your neighborhood. What do you notice and wonder?
				• Sample formative assessment
				  ○ Describing Using the Senses
				
				• Five Senses: Taste, Smell, Sight, Hearing, Touch - Quiz for Kids (5:28)
				
				• Description (Assessment: Surface #2)
				
				• Description (Assessment: Surface #3)
				
				• Description (Assessment: Surface #4)
				
				• Using Our 5 Senses: Surface - *K5 Learning*
				
				• Can You Hear It? - Surface - *K5 Learning*
				
				• Can You Smell It? - Surface - *K5 Learning*
				
				• Can You See It? - Surface - *K5 Learning*
				
				• Can You Feel It? - Surface - *K5 Learning*
				
				• Can You Taste It? - Surface - K5 Learning
				
				• Sorting Toys By Properties - *Hand2Mind*

			• Explore: Does Colour Affect Taste? **Science Buddies Video - Does Color Affect Taste?** • Practice describing an object to a partner referring to all senses. ○ Sample Activity --- **Local/Nearby Options for Experiential Learning Excursions** • Local neighborhood, classrooms, public spaces, etc. --- **Other Resources** • The 5 Senses and Observation: Hands on Projects for Kids • 32 Five Sense Activities to Engage Kids in the World Around Them. • Elmo Five Senses Read Aloud (5:22) • Sandra Boynton Song: Celebrate Your Nose! • Properties of Matter	

	Objects may be similar in one or more properties and different in another property.	Compare properties of various objects.	**Infusing Indigenous Knowledge**
			Main Website
			
			Kindergarten Science
			
			Sample Surface Level Activities
			Similarity | Difference
			
			• What is a Similarity & Difference?
			  ○ Similarity & Difference
			
			• What is a Venn Diagram?
			  ○ Venn Diagram	

Resources

Additional Websites and Resources to Support *Learning*

Indigenous Related:

- The Learning Circle: Classroom Activities on First Nations in Canada - Ages 4 to 7 - **The Learning Circle** has been produced to help meet Canadian educators' growing need for elementary-level learning exercises on First Nations. It is the second in a series of four classroom guides on First Nations in Canada.

- Learning from the Land (teacher information) - Although there is much diversity between First Nations, Métis, and Inuit, a deep and abiding connection to the land is common. Dr. Leroy Littlebear says that “The land is a sacred trust from the Creator. The land is the giver of life like a mother. The ecological aspect of Indigenous knowledge is all about the land. The land is a source of identity for Aboriginal People. CASS Resource.

General: Kindergarten: Matter Specific

- Kindergarten Matter - developed by Red Deer Public Schools (SLEAKs, SPAMs and SWAGs)
- View the **Matter - Kindergarten** Video and slide deck found on the APLC site for additional suggestions and resources.
- *K5 Learning* provides free worksheets and additional ones through subscription - sign up for free membership if using the resources.(surface level activities) Our Senses, Using Our 5 Senses,
- ***Let’s Talk Science*** - Bring critical thinking and curiosity to life in your K-12 classroom with our library of curriculum-aligned, bilingual, and ready-to-use resources. Save valuable prep time while creating engaging and relevant learning experiences for every student. Picture Collection of Senses, Observe and Record, Observing
- ***PBS Learning Media*** - **PBS Learning Media** - a large selection of science related resources. Review by subject, subtopic and grade. For Kindergarten selections check out the following general link or The Five Senses., My Five Senses, Exploring Our Senses, Sorting Objects Based on Properties
- ***Alberta Parks*** - Alberta Parks - ABC Nature Walk
- **Hand2Mind Science Activities** - Lessons and Investigations for K-5 students Sort Toys By Properties
- Sorting By Property - *K5 Learning* - These surface level activities will allow students practice at sorting objects

General: Kindergarten: Sites good for a variety of Organizing Ideas

- Earth and the Environment - a Kindergarten Cross Curricular Unit - the resource outlines how we might connect the science topics of the earth to mathematics, writing and centre creation. Created by Ontario Teachers Federation: *It’s About Time* Series
- Science North - this site provides Kindergarten teachers with a weekly lesson and video covering the major Organizing Ideas. Check the site for resources that match your unit plan.-
- Next Generation Science Standards - Sample Bundling (Multiple Organizing Ideas) in an instructional unit) based on NGSS Model
- What Are Storylines? **- Next generation Science Storylines**
- **cK-12 - Free STEM teaching resources** - provides a set of online science textbooks as open educational resources. (none to match Senses)
- ***Ag for Life:*** https://resources.agricultureforlife.ca/en-ca/for-educators/curriculum-linked-resources

  We have full permission to use these resources as well as the National Agriculture resources. Please let them know if there are topics missing and they will help support possible development.

Resources Developed by School Divisions/Educational Institutions

Edmonton Catholic Pacing Guides

Edmonton Catholic Curriculum Crates

Edmonton Catholic Schools: Academic Vocabulary: Kindergarten to Grade 3

Edmonton Public Science Snippets K-3

Edmonton Public Scope and Sequence

LearnAlberta Curriculum

APRDC New Curriculum Professional Learning Resources

Alberta Science Curriculum Teacher Resources (CMASTE): Click on the Teaching Resources Tab at the top of The Home Page.

This website hosts resources developed to support teachers in implementing the Alberta Science Curriculum initially released in 2023. The resources were created with support from the Centre for Mathematics, Science, and Technology Education (CMASTE) and contributions from students in the Faculty of Education, Elementary Education B.Ed. program. We will be continuing to add resources to this site, so please check back regularly.

SLEAKs, SPAMs and SWAGs - Sciences Resources Developed by Red Deer Public Schools:

The purpose of this guide is to assist any kindergarten teacher in their instruction of the new science curriculum. Within this document, you will find links to external sites and resources, as well as internal resources that are organized by the coordinators of RDPSD. This is certainly a dynamic document in that it is always changing; if you have any suggestions for modifications, please do not hesitate to contact the RDPSD science coordinator. Contact Nate Siler if you have any questions.

Lesser Slave Watershed Council Classroom Presentations
Lesser Slave Forest Education Society (they are updating their programs to match the new curriculum)

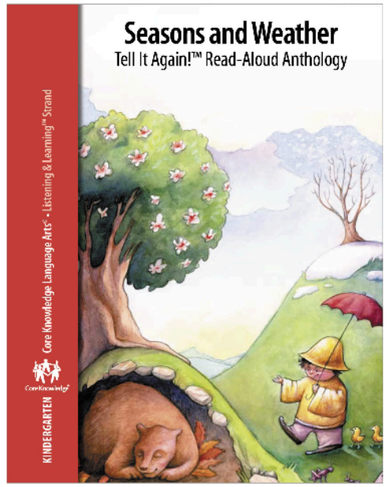
Comox Valley School District #71 - Science Resources. BC Ministry of Education

Government of Canada Science Resources:
Activity Books:
Science is all around us and can be discovered, explored and used in so many ways! This new Activity Book showcases the diversity of the world of science through activities in health, energy, environment, agriculture, meteorology, astronomy, the living world and much more!
Canadian Science - History and Achievements
Select from 67 different entries of the history and achievements of Canadians in Science.
Resource links
Select from pages of activities, maps, lesson plans, videos etc. to support students of all age levels in science education.

Websites and Resources to Support *Planning*

Inclusion - Best Practices Meeting the Needs of **All Learners in Science**

• ***Alberta Agriculture*** - Agriculture education k-12 https://www.alberta.ca/agricultural-education.aspx Resources here are based on the old Topics but there are still some amazing linkages to our new curriculum. Most activities are black and white which teachers will appreciate since not everyone can copy in color! If we use the materials, download the PDF to your drive or put it in the Assessment folder that I shared with you, name it with the outcome number and name they used in the title and then hyperlink. Cite the source and hyperlink them to the page you download from. • ***Ulnooweg Education Centre*** offers science units and an Indigenous Perspective Sign in for a free account through the Resources section into ***Backyard Science:*** Select the resources you would like to review. • Salisbury Greenhouse - Native Plants in Alberta • Plants, People and Climate Change | Little Green Thumbs 2023 - check this link for Activities • ***Ontario Science Centre*****:** Stem Education Toolkit - contains resources to assist in starting your students in their inquiry journey, beginning with their question. It also has several assessment tools readily available. • ***Ontario Science Centre*****:** Curriculum Resources - selected curriculum resources that include a video presentation and corresponding documents that provide easy-to-follow instructions and extension activities using everyday materials. • • KidSparkz - Early Childhood - K Activities - Free and Paid Membership	**Differentiation:** Preview vocabulary and pre teach to students. Use various forms of media to present vocabulary including simplified explanations, visuals in the form of diagrams to label and connect concepts.
Primary Connections (teacher guides, units of study and sample assessment rubrics based on Australian Science Curriculum but offers great links and activities to our curriculum) *No applicable one's for this KUSP* Suggest **Core Knowledge**	**Gizmos** New Learn Alberta(Teacher Login Required) ExploreLearning Gizmos Site: ***no Kindergarten Match*** ExploreLearning Gizmos Site: Request a Gizmos account: alberta@explorelearning.com

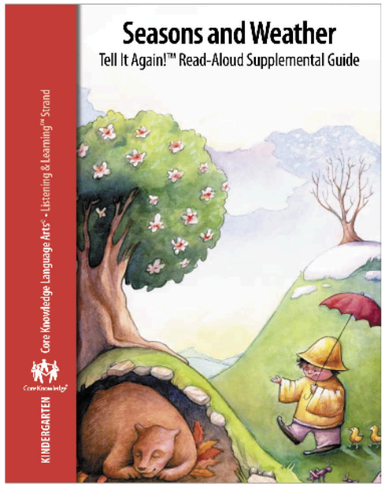


CKLA Domain 8: Seasons and Weather

READ-ALOUD ANTHOLOGY

This comprehensive teacher guide

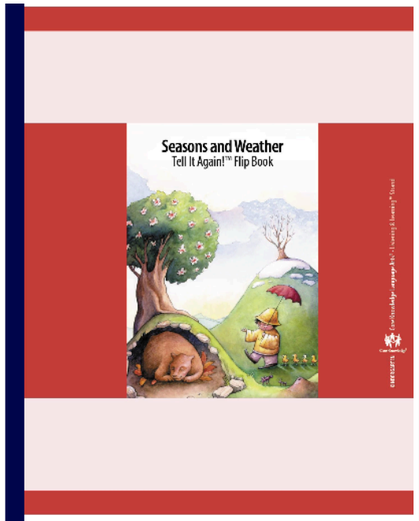
Link



CKLA Domain 8: Seasons and Weather

READ-ALOUD SUPPLEMENTAL GUIDE

Link



CKLA Domain 8: Seasons and Weather

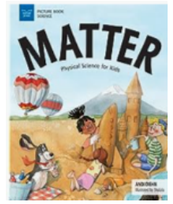
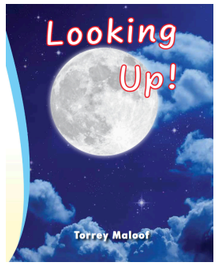
FLIP BOOK

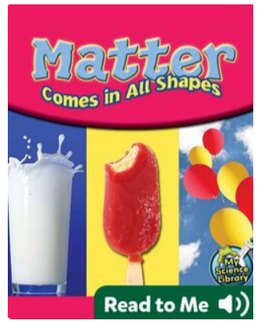
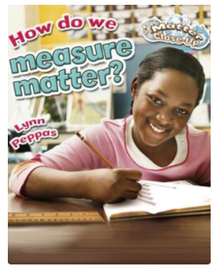
Each Flip Book contains a

Link

Literature Connections

KUSPs	KM1						

Title & Author	Format (Picture Book, Novel, Non-fiction, other)	Publisher & ISBN	Book & Numbered Outcome Link
Matter: Physical Science for Kids *by* ***Andi Diehn*** *and* ***Hui Li*** What's the matter? Everything is matter! Everything you can touch and hold is made up of matter—including you, your dog, and this book! Matter is stuff that you can weigh and that takes up space, which means pretty much everything in the world is made of matter. Explore the definition of matter and the different states of matter, plus the stuff in our world that isn't matter, such as sound and light. Simple vocabulary, detailed illustrations, easy science experiments, and a glossary all support learning for kids ages 5 to 8.	Picture Book, Non-Fiction	Nomad Press 10-1619306441 13-978-1619306448	 KM1, 1M1 EPIC,
Looking Up by Torrey Maloof Look up at the night sky. What do you see? This nonfiction reader introduces students to the subject of scientific observation, and teaches students about the things we use to observe and learn about the world around us. Aligned to state and national standards, the book contains easy-to-read text and nonfiction text features like an index, a glossary, captions, bold font, and detailed images to keep students connected to the text. A hands-on science experiment helps students apply what they have learned and develops critical thinking skills.	Picture Book, Non-Fiction	Teacher Created Materials Available through Pearson Canada 10-1480745723 13-978-1480745728	 KM1/1M1
What a Scientist Sees by Dona Herweck Rice This high-interest nonfiction reader will help students gain science content knowledge while building their literacy skills and reading comprehension. This appropriately levelled text features hands-on, simple science experiments and full-colour images and graphics. Fourth grade students will learn all about the scientific method through this engaging text that supports STEM education and is aligned to the Next Generation Science Standards.	Picture Book, Non-Fiction	Nomad Press 10-1619306417 13-978-16193064178	 KM1-4M1

Matter Comes in All Shapes by ***Amy S. Hansen*** Investigating What Matter Is!	Picture Book, Non-Fiction	Rourke Educational Media 13-9781612366647	 KM/1M EPIC
How Do We Measure Matter? *by* ***Lynn Peppas*** This innovative title supports both math and science standards. Readers learn to identify different tools used to measure matter, such as balances, rulers, and thermometers. Easy to follow text helps readers gain hands-on experience measuring, collecting and recording data, and graphing their results.	Picture Book, Non-Fiction	Crabtree Classics 10-077870775X 13-978-0778707752	 K-1M Reading level grade 2 EPIC