

Curriculum Planning & Assessment Resource

Science

Grade 3: Matter



Alberta Regional Professional Development Consortia

Dedicated to the provision of professional learning opportunities at the local, regional and provincial levels



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About This Document		
<p>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 it their planning.</p> <p>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.</p> <p>While every attempt has been made to provide credit and receive permissions, some errors or omissions may have occurred. Please contact info@arpdc.ab.ca to report any error or omissions.</p>		
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Acknowledgements		
<p>Thank you to all the teachers, curriculum specialists, and technical expertise from Alberta school divisions and ARPDC who collaborated to develop, review, and revise these planning and assessment documents to support curriculum implementation.</p>		

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INTRODUCTION

Organizing Idea

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

Guiding Question

How can materials change?

Learning Outcome

3M1 Students investigate and analyze how materials have the potential to be changed.

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: [Using Narrative Writing as an Assessment](#)

Computer Science & Matter Connection	Scientific Methods
<ul style="list-style-type: none">• Introductory Video & Slide Deck "Wait! What? I'm teaching Computer Science?"<ul style="list-style-type: none">◦ (Part 1) (Part 2)	<ul style="list-style-type: none">• Scientific Method Introductory Video - ARPDC (How scientific method fits in the curriculum.)• Integrating Matter with Scientific Methods Sample Unit Plan
<ul style="list-style-type: none">• Grade 3 Computer Science Curriculum Planning and Assessment Resource (CPAR)<ul style="list-style-type: none">◦ Please Check the ARPDC site for availability.• Integrating Computer Science into Grade 3 Matter<ul style="list-style-type: none">◦ Video: https://www.youtube.com/watch?v=B5r2kp3P0P0◦ Slidedeck: Grade 3 Earth Systems Connections to Computer Science.pdf	<ul style="list-style-type: none">• Introducing Steps in an Investigation: Grade 3<ul style="list-style-type: none">◦ asking questions◦ making predictions◦ planning the investigation◦ observing and recording data◦ analyzing data◦ reaching conclusions◦ discussing observations and conclusions
<ul style="list-style-type: none">• Computer Science Organizing Idea KUSP cards - use these to help understand and integrate CS KUSPs throughout teaching and learning in Science and across curricula.	<ul style="list-style-type: none">• Grade 1-6 Investigation Steps Progression
<ul style="list-style-type: none">• CS Unplugged - “Computer Science without a computer”• ScratchJr - teach computer science outcomes using the ScratchJr app on a Chromebook, iPad or other device. This is a great way to introduce computational thinking outcomes before introducing them to block coding later.• Computational Thinking videos<ul style="list-style-type: none">◦ For students: Jules. Computational Thinking.Video - 4 minutes overview, suitable for students - explanation followed by example about Max and his car issues - https://youtu.be/mUXo-S7gzds◦ For teachers: Hello Ruby. “Computational thinking?” - a whimsical and sensible approach to learning about computational thinking: “All big problems are tiny problems stuck together.” See her Youtube playlist here, Love Letters for Computers.	

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Click to jump!

KUSPs	3M1.1	3M1.2	3M1.3	3M1.4	3M1.5	3M1.6	
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[Literature Connections](#)

KUSPs 3M1.1

Prerequisite Knowledge

Students can :

- identify materials used to make various objects
- Combine materials to create an object for a specific purpose

Misconceptions

Students may believe that:

- the word *material* means fabric.
- all man made products are from non natural sources

I Know Statements

- I know that processed materials are modified from natural materials and do not occur in nature.
- I know that processed materials are designed and manufactured for a specific purpose.
- I know that First Nations, Métis, and Inuit communities respectfully interact with natural materials.
- I know that First Nations, Métis, and Inuit communities interact with natural materials for specific purposes.

I Understand Statements

- I understand that materials can be used in their natural form or processed to create new materials.
- I understand that interaction with natural materials by First Nations, Métis, and Inuit is guided through living in harmony and balance with the land.

Student Language | Essential Vocabulary & Concepts

[\(The Concept Project\)](#)

- Material
- Processed Material
- Natural Material
- Harmony
- Balance
- Interaction

I Can Statements | Skills

- I can relate a processed material to the natural material from which it originated.
- I can discuss how interaction with natural materials is guided by relationships with the land for First Nations, Métis, and Inuit communities.

KUSP 3M1.1

Learning Outcome				
3M1 Students investigate and analyze how materials have the potential to be changed.				
Knowledge	Understanding	Skills & Procedures	Sample Activities & Resources What is Surface, Deep and Transfer	Assessments (formative)
<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>Materials can be used in their natural form or processed to create new materials.</p>	<p>Relate a processed material to the natural material from which it originated.</p>	<div><div>NOTE: Teachers May Wish to Teach KUSP line 3M1.1 and 3M1.2 After KUSP Lines KM1.3 - KM1.6</div><div>Sample Surface Level Activities</div><div>Purpose Material Processed Material Natural Materials Relationship</div><ul style="list-style-type: none">Natural/Processed Materials<ul style="list-style-type: none">Natural Materials: Concept IntroductionRelate a processed material to the natural material from which it originated.<ul style="list-style-type: none">Activity: Concept MappingWhat is a Purpose?Students can look around the room to identify objects, their purpose, the material they are made from, and whether the objects are made from natural or processed materials.Students can practice making predictions about these questions using the “I Used to Think ... Now I Think” strategy.<ul style="list-style-type: none">How is Salt Made?How Glass Is Made (6:37)How Are Sea Shells Created?Practice making concept maps to relate a processed material to the natural material from which it originated.<ul style="list-style-type: none">What is a Relationship?What is A Concept MapSample Concept Map ActivityAssign a material to students from How It's Made and have students represent how the material is made with a concept map.<div>Other Resources</div></div>	<div>Pre Assessment</div> <ul style="list-style-type: none">Materials (Grade 2)<ul style="list-style-type: none">What are Materials? -Use slides 5-7 as the pre-assessment.Provide students with an assortment of natural and processed material. Have students create something new with both natural and processed material.<ul style="list-style-type: none">Have student explain what the new material is, and what natural and processed materials are used in it.

			<ul style="list-style-type: none">• YouTube Channel How It's Made has many videos on how things are made.	
<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">• tipis• igloos• medicines• clothing• transportation• ceremonies	<p>Interaction with natural materials by First Nations, Métis, and Inuit is guided through living in harmony and balance with the land.</p>	<p>Discuss how interaction with natural materials is guided by relationships with the land for First Nations, Métis, and Inuit communities.</p>	<div><p>Sample Surface Level Activities</p><p>Interaction Relationship Natural Materials Harmony Balance</p><ul style="list-style-type: none">• Relationship - Introduction• Interaction- Concept Introduction• Living in Harmony and Balance• Natural Materials: Concept Introduction</div> <hr/> <div><p>Sample Deep Level Activities</p><ul style="list-style-type: none">• Use the Thinking Routine called Claim, Support, Question respond to this question:<ul style="list-style-type: none">○ How do First Nations, Métis, and Inuit interactions with natural material show a relationship of balance and harmony with the land?○ Have students examine some of the learning resources accompanying this section (see below) to create a representation that<ul style="list-style-type: none">■ identifies the natural materials that are important to First Nations, Métis, and Inuit communities;■ explains how First Nations, Métis, and Inuit communities used the natural materials to create other materials for a specific purpose;■ supports or refutes their original thoughts to the question “Is interaction with natural material guided by relationship with the land? “</div> <div><p>Infusing Indigenous Knowledge</p><ul style="list-style-type: none">• Infusing Indigenous Knowledge into Curriculum (Grades 1-12) Main Website: Grade 3 Science:<ul style="list-style-type: none">○ Use an archaeological dig to learn about the past.○ Share examples of stories and traditional knowledge from the past:<ul style="list-style-type: none">• In 1992, an Elder found arrowheads in the river bed.• Story about a hill and why it was preserved to save insects (Emile Houle).• In Peace River, a hill changed shape• Elder’s story about big snowballs in the field by High Prairie (Herman Sutherland).○ Share Elders’ knowledge about fish traps.○ Observe the movement of trees and earth with the growth of the trees and the weather in Wabasca.○ Observe how road building changes the environment and lives (road between Peerless and Trout and Fort McMurray)</div>	<div><p>Sample Surface Assessments</p><ul style="list-style-type: none">• Some or parts of this activity can be used to assess the concepts of harmony and balance.<ul style="list-style-type: none">○ Harmony and Balance Assessment</div> <div><p>Sample Summative Assessments</p><ul style="list-style-type: none">• Read the story “Our Treaty With the Hoof Nation” found in <i>The Gift Is in the Making: Anishinaabeg Stories</i>.<ul style="list-style-type: none">○ <i>This indigenous story is how an unbalanced relationship with the moose, caribou and deer led to their disappearance. The people realized that their relationship with the land was unsustainable and made a treaty with the animals to rebuild a relationship of harmony and balance.</i>○ Discuss how the story “Our Treaty With the Hoof Nation” shows that interaction with natural materials is guided by relationships with the land for First Nations, Métis, and Inuit communities.</div>

			<ul style="list-style-type: none">• Gr. 3 Science (January) Matter Students investigate and analyze how materials have the potential to be changed - Edmonton Catholic Science Crates• Grandfather and Grandmother Series - https://indigenousreflections.ca/• Land and Resources - this resource is a summary of what natural resources First Nations used for living off the land.(begin and Food Resources)• Red River Cart<ul style="list-style-type: none">◦ Red River Cart for Kids◦ Métis Culture Card◦ Canadian Geographic Atlas of Canada• Birch Tree<ul style="list-style-type: none">◦ Birch Bark Biting◦ Birch Bark Soap◦ Birch Syrup• Snow<ul style="list-style-type: none">◦ Building An Igloo - Kitikmeot Heritage Society◦ How An Igloo Keeps You Warm• Bison<ul style="list-style-type: none">◦ Buffalo and Seals◦ Indigenous People's Atlas of Canada• Sacred Medicines<ul style="list-style-type: none">◦ Cedar◦ Sage◦ Tobacco◦ Sweetgrass• Visit and observe at various sites with Elders (e.g., buffalo no longer at Prairie Lake to keep it open).• Share stories about stewardship and survival (e.g., how fish and meat was preserved, underground cooling, smoking and drying, berry picking, • Smoking and drying food and making a cache)• Making natural insect repellents (dry birch bark) and a container to carry it.• Planning/making a land-based camp (e.g., no insect spray, sunscreen, phone, etc.) and making only whole food, your own toys and gear.	
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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. See Unit 2 for Seasons.
- [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.

Grade 3: Matter Specific

- [Grade 3 Matter](#) - developed by Red Deer Public Schools(SLEAKs, SPAMs and SWAGs)
- View the **Matter - Grade 3** [Video and slide deck](#) found on the ARPDC site for additional suggestions and resources.
- [Matter and the Scientific Method Unit Plan](#) - This sample unit plan integrates the organizing ideas of Matter and the Scientific Methods. This phenomenon based unit, focuses on investigation to help students answer the questions: “What makes a bouncy ball so bouncy?”
- [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. [Matter videos and activities](#).
- **PBS Learning Media** - [PBS Learning Media](#) - a large selection of science related resources. Review by subject, subtopic and grade. For Grade 3 selections check out the following general [link](#) or Man Made Materials.
- [ACS American Chemistry for Life](#) - this site contains lessons and Inquiry Activities for Grades K-8 - [Properties of Materials](#) or [Man Made Materials vs Natural](#).
- [Super Staar](#) - Properties of Matter
- **Hand2Mind Science** [Activities](#) - Lessons and Investigations for K-5 students
- **Alberta Parks** - [Alberta Parks](#) - ABC [Nature Walk](#) (link the walk to different materials that students find and their purpose).

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

- Science Curriculum Wayfinder - [Grade 3](#) - created by the University of Alberta
 - [Matter](#) Created by Ontario Teachers Federation: *It's About Time* Series
 - [Teach Engineering](#) - STEM Learning K-12. [Comparing natural and man made materials](#) and more!

 - [Science North](#) - this site provides teachers with a weekly lesson and video covering the major Organizing Ideas. Check the site for resources that match your unit plan.-

 - [Science Buddies](#) - select from a variety of activities, STEM applications, Investigations and articles. [Matter: Man made vs Natural.](#)
 - Edmonton Catholic Pacing Guide - [January/February](#)
- General:**
- Grade 3: Sites good for a variety of Organizing Ideas**
- What Are Storylines? - [Next generation Science Storylines](#)
 - *K5 Learning* provides [free worksheets](#) and additional ones through subscription - sign up for free membership if using the resources.(surface level activities)

 - [cK-12 - Free STEM teaching resources](#) - provides a set of online science textbooks as open educational resources.

 - **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. [Matter](#)

 - **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.
 - [Ulnooweg Education Centre](#) offers science units and an Indigenous Perspective Sign in for a free account through the Resources section into [Backyard Science](#): Select [Properties of Matter](#)..
 - [Matter Concepts](#)
 - [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.
 - [Study Jams](#) video presentation as well as online quiz .Select 'Matter' from the "all Topics' button.

 - [National Geographic:](#) - enter your topic on the site to open specific files. Instructional Planning and Teaching in.
 - Science - [IOWA Department of Education](#)
 - [Elementary Ed. Resource Sharing](#) - this site has Inquiry Units and Teacher Tools for premade units of study. A great fit to most of our Alberta Curriculums!

 - [PBS Learning](#) - a variety of video libraries for most science topics at all grades.

 - [Science Teachers Association of Ontario](#) - have similar units Outcomes to Alberta

 - [Main Agriculture, Conservation and Forestry](#) - site for plants and animal interactions and relationships. All grades.

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](#)

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

Alternate Resource:
[Sacred Relationships Lesson 2 Grade 5:](#) Histories and Stories of Ways of Life in Canada - this lesson focuses on:
"To recognize that for Aboriginal people there is no separation between ourselves and the land and water."

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](#)
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.

<ul style="list-style-type: none">Iowa Agriculture Literacy Foundation	
	Gizmos New Learn Alberta(Teacher Login Required) New Learn Alberta: no Grade 3 match ExploreLearning Gizmos Site: Request a Gizmos account: alberta@explorellearning.com

Click to jump!

KUSPs	3M1.1	3M1.2	3M1.3	3M1.4	3M1.5	3M1.6	
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[Literature Connections](#)

KUSPs 3M1.2

Prerequisite Knowledge

Grade 2 - Students know how and what properties can be tested in materials; know that various properties of materials can be measured including length and weight; understand the terms transparency, malleability, and reflection.

Student Language | Essential Vocabulary & Concepts [\(The Concept Project\)](#)

- Evaporation
- Condensation
- State of Matter
- Solid
- Liquid
- Gas

Misconceptions

Students may believe that:

- ‘solid’ is another word for hard or opaque
- solids are hard and cannot break or change shape easily and are often in one piece
- substances made of very small particles like sugar or sand cannot be solids
- particles in liquids are further apart than in solids and they take up more space
- when air is pumped into balloons, they become lighter • water in different forms – steam, water, ice – are all different substances
- all liquids boil at the same temperature as water (100 degrees)
- melting, as a change of state, is the same as dissolving
- steam is visible water vapour (only the condensing water droplets can be seen

Source: Science: Everyday Materials Progression of Skills in milestones Document.
Goldsboroughprimary.co.uk

I Know Statements

- I know that matter is anything that takes up space and has weight.
- I know that states of matter include solid, liquid, and gas.
- I know that melting is a change of state from solid to liquid.
- I know that freezing is a change of state from liquid to solid.
- I know that evaporation is a change of state from liquid to gas.
- I know that condensation is a change of state from gas to liquid.

I Understand Statements

- I understand matter can change state if heated or cooled.

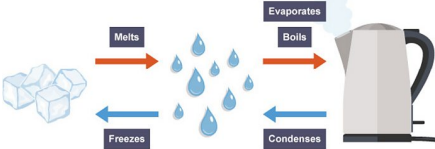
I Can Statements | Skills

- I can conduct an investigation to demonstrate changes of state.
- I can discuss examples of daily activities that include heating and cooling.

Click to jump!

KUSP 3M1.2

Learner Outcome	3M1 Students investigate and analyze how materials have the potential to be changed.			
Knowledge	Understanding	Skills & Procedures	Sample Activities & Resources What is Surface,Deep and Transfer	Assessments (formative)

<p>Matter is anything that takes up space and has weight.</p> <p>States of matter include solid, liquid, and gas.</p> <p>Melting is a change of state from solid to liquid.</p> <p>Freezing is a change of state from liquid to solid.</p> <p>Evaporation is a change of state from liquid to gas.</p> <p>Condensation is a change of state from gas to liquid.</p>	<p>Matter can change state if heated or cooled.</p>	<p>Conduct an investigation to demonstrate changes of state.</p> <p>Discuss examples of daily activities that include heating and cooling.</p>	<p>Sample Surface Level Activities</p> <ul style="list-style-type: none">• What is Matter? Anchor chart by Poet Prints Teaching• Matter Sorting Cards by Math Equals Love <div></div> <ul style="list-style-type: none">• How Water Changes state image by bbc.co.uk/bitesize<ul style="list-style-type: none">◦ Note: Particle Movement and Arrangement is Studies in Grade 5 Matter• States of Matter and Changes of State - Science For Kids video by Smile and Learn - English (7:00)<ul style="list-style-type: none">◦ Video Reflection worksheet - States of Matter and Changes of State <hr/> <p>Deep Level Activities</p> <ul style="list-style-type: none">• Conduct an investigation to demonstrate changes of state.<ul style="list-style-type: none">◦ Sample Investigation: Make Ice Cream in a Bag by ScienceBuddies.org <hr/> <p>Infusing Indigenous Knowledge</p> <ul style="list-style-type: none">• Infusing Indigenous Knowledge into Curriculum (Grades 1-12) Website: Grade 3 Science:• Continue the activity from outcome 3M 1.1.• Freeze water taken from tree sap for later use.• Melt the sap to make syrup. Boil the sap; as it evaporates, keep adding water until it reaches a syrup consistency.• Discuss why sap is collected in the spring, before the buds grow. <hr/> <p>Other Resources</p> <ul style="list-style-type: none">• STEAM: G3.1M-1: Up and Atom by Red Deer Public Schools• Video: States of Matter for Kids (6:56)	<p>Consider some of the investigations created by ACS Chemistry for Life - Changes Caused by Heating and Cooling to check for student understanding. (uses the 5C's)</p>
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Resources	
<p>Additional Websites and Resources to Support learning</p> <p>Indigenous Related: Learning Circle: Classroom Activities on First Nations in Canada ages 4-7. Unit 4: Colours....learn how plants are used to make colours and explore the beadwork of Indigenous Peoples. Learning from the Land (teacher information)</p>	<p>Resources Developed by School Divisions/Educational Institutions</p> <p>Edmonton Catholic Pacing Guides Edmonton Catholic Curriculum Crates Edmonton Catholic Schools: Academic Vocabulary: Kindergarten to Grade 3</p>

Sense-ational Water Students use their five sense to discover more about Indigenous Peoples’ unique relationship with water and how water connects all creatures. Students solve and create riddles that focus on using the five senses to provide important clues about water.

Grade 3: Matter Specific

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- **Matter and the Scientific Method Unit Plan** - This sample unit plan integrates the organizing ideas of Matter and the Scientific Methods. This phenomenon based unit, focuses on investigation to help students answer the questions: “What makes a bouncy ball so bouncy?
- **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. **Matter videos and activities.**
- **PBS Learning Media** - **PBS Learning Media** - a large selection of science related resources. Review by subject, subtopic and grade. For Grade 3 selections check out the following general [link](#) or [States of Matter](#).
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<p>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. Matter</p> <ul style="list-style-type: none">• 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.• UInooweg Education Centre offers science units and an Indigenous Perspective Sign in for a free account through the Resources section into Backyard Science: Select Properties of Matter..• Matter Concepts• 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.• Study Jams video presentation as well as online quiz .Select ‘Matter’ from the “all Topics’ button.• National Geographic: - enter your topic on the site to open specific files. Instructional Planning and Teaching in.• Science - IOWA Department of Education• Elementary Ed. Resource Sharing - this site has Inquiry Units and Teacher Tools for premade units of study. A great fit to most of our Alberta Curriculums! States of Matter is investigated through Water Balloon in a Bottle Science Demonstration for Grade 3• PBS Learning - a variety of video libraries for most science topics at all grades. States of Matter• Science Teachers Association of Ontario - have similar units Outcomes to Alberta• Main Agriculture, Conservation and Forestry - site for plants and animal interactions and relationships. All grades.• Iowa Agriculture Literacy Foundation	
<p>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)</p> <p>What’s the Matter Resource Booklet</p> <p>What’s the Matter accompanying Sheets - download the documents to open them</p> <p>What’s the Matter Assessment</p> <p>About this unit What's the matter Matter is all around us. It can be as small as the particles that make up the tiniest cell in our skin or as large as the whole galaxy. Anything that takes up space and has mass is called matter. The matter that we experience every day and the matter that we are made of is only a tiny fraction of the matter that exists in the universe. By investigating and understanding matter, scientists are able to find out more about the universe and its possibilities. The What’s the matter? unit is an ideal way to link science with literacy in the classroom. Through hands-on investigations, students explore the properties of solids, liquids and gases, and plan and conduct an investigation of how the properties of materials change with temperature.</p>	<p>Gizmos (Teacher Login Required) New Learn Alberta: no Grade 3 match ExploreLearning Gizmos Site: Phases of Water</p> <p>Request a Gizmos account: alberta@explorellearning.com</p>

Click to jump!

KUSPs	3M1.1	3M1.2	3M1.3	3M1.4	3M1.5	3M1.6	
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[Literature Connections](#)

KUSPs 3M1.3

Prerequisite Knowledge

- Changes can be observed in environments.
- Changes of states of matter: heating, melting, frezing

Misconceptions

Students may believe that:

- ‘solid’ is another word for hard or opaque
- solids are hard and cannot break or change shape easily and are often in one piece
- substances made of very small particles like sugar or sand cannot be solids
- particles in liquids are further apart than in solids and they take up more space
- when air is pumped into balloons, they become lighter • water in different forms – steam, water, ice – are all different substances
- all liquids boil at the same temperature as water (100 degrees)
- melting, as a change of state, is the same as dissolving
- steam is visible water vapour (only the condensing water droplets can be seen

Source: Science: Everyday Materials Progression of Skills in milestones Document.
Goldsboroughprimary.co.uk

Student Language | Essential Vocabulary & Concepts

[\(The Concept Project\)](#)

- Volume

I Know Statements

- I know that a solid is a state of matter that has a definite shape and volume.
- I know that a liquid is a state of matter that has a definite volume but no definite shape.
- I know that a liquid flows and takes the shape of the container it is in.
- I know that a gas is a state of matter that has neither definite shape nor definite volume.
- I know that gas flows easily and expands to the size of the container it is in.
- I know that volume is the amount of space a solid, liquid, or gas takes up.

I Can Statements | Skills

- I can describe solid, liquid, and gas states of matter in terms of the properties of shape and volume.
- I can conduct an investigation to demonstrate the properties of the state of matter.conduct an investigation to demonstrate the properties of the state of matter.

I Understand Statements

- I understand that solids, liquids, and gases have distinct properties.

KUSP 3M1.3

Learning Outcome				
3M1 Students investigate and analyze how materials have the potential to be changed.				
Knowledge	Understanding	Skills & Procedures	Sample Activities & Resources What is Surface,Deep and Transfer	Assessments (formative)

<p>A solid is a state of matter that has a definite shape and volume.</p> <p>A liquid is a state of matter that has a definite volume but no definite shape.</p> <p>A liquid flows and takes the shape of the container it is in.</p> <p>A gas is a state of matter that has neither definite shape nor definite volume.</p> <p>A gas flows easily and expands to the size of the container it is in.</p> <p>Volume is the amount of space a solid, liquid, or gas takes up.</p>	<p>Solids, liquids, and gases have distinct properties.</p>	<p>Describe solid, liquid, and gas states of matter in terms of the properties of shape and volume.</p> <p>Conduct an investigation to demonstrate the properties of the state of matter.</p>	<p>Sample Surface Level Activities solid liquid gas volume property</p> <ul style="list-style-type: none"> What is a property? Students sort solids, liquids & gases <ul style="list-style-type: none"> Downloadable cards: Learning About States of Matter with Sorting Cards by Gift of Curiosity  <p>States of Matter Balloon Activity by Fit Kids Club</p> <ul style="list-style-type: none"> Fill balloons with water (liquid and frozen) and air, then talk about the properties of each. This is a good way to demonstrate that matter as a gas is there, even though you can't always see it. States of Matter Balloon Reflection Sheet <p>Sample DeepLevel Activities</p> <ul style="list-style-type: none"> STEAM: G3.1M-4: What Kind of State Am I In? by Red Deer Public Schools <hr/> <p>Resources</p> <ul style="list-style-type: none"> How Water Changes state States of Matter and Changes of State - Science For Kids Video Reflection worksheet - States of Matter and Changes of State Exploring Liquids project (EPSB Teacher Support Pack) by Edmonton Public Schools 	<p>Sample Formative Assessment</p> <ul style="list-style-type: none"> Solid, Liquid, Gas Assessment <p>Sample Summative Assessment</p> <ul style="list-style-type: none"> This States of Matter Representation Worksheet can be used as a formative evaluation. View States of Matter by Mrs. Thompson's Treasures as an example.
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Resources	
<p>Additional Websites and Resources to Support learning</p> <p>Indigenous Related: Learning Circle: Classroom Activities on First Nations in Canada ages 4-7. Unit 4: Colours.....learn how plants are used to make colours and explore the beadwork of Indigenous Peoples.</p>	<p>Resources Developed by School Divisions/Educational Institutions</p> <p>Edmonton Catholic Pacing Guides Edmonton Catholic Curriculum Crates</p>

[Learning from the Land \(teacher information\)](#)

[Sense-ational Water](#) Students use their five sense to discover more about Indigenous Peoples’ unique relationship with water and how water connects all creatures. Students solve and create riddles that focus on using the five senses to provide important clues about water.

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investigation of how the properties of materials change with temperature.

Source: © Australian Academy of Science, December 2012. Revised and reprinted August 2014. Revised June 2020.Email: pc@science.org.au or www.primaryconnections.org.au

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KUSPs	3M1.1	3M1.2	3M1.3	3M1.4	3M1.5	3M1.6	
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[Literature Connections](#)

KUSP 3M1.4

Prerequisite Knowledge

Students know

- terms such as such as melting, freezing, boiling
- States of matter solid, liquid, gas

Misconceptions

Students may believe that:

- ‘solid’ is another word for hard or opaque
- solids are hard and cannot break or change shape easily and are often in one piece
- substances made of very small particles like sugar or sand cannot be solids
- particles in liquids are further apart than in solids and they take up more space
- when air is pumped into balloons, they become lighter • water in different forms – steam, water, ice – are all different substances
- all liquids boil at the same temperature as water (100 degrees)
- melting, as a change of state, is the same as dissolving
- steam is visible water vapour (only the condensing water droplets can be seen

Source: Science: Everyday Materials Progression of Skills in milestones Document.
Goldsboroughprimary.co.uk

I Know Statements

- I know that substances are made of matter that has not been mixed with other matter, including water.
- I know that the temperature at which a substance changes from solid to liquid is called the melting point.
- I know that the temperature at which a substance changes from liquid to solid is called the freezing point.
- I know that the melting and freezing points of a substance are the same temperature.
- I know that the temperature at which a substance changes from liquid to gas is called the boiling point.
- I know that the melting/freezing point of water is 0 °C.
- I know that the boiling point of water is 100 °C.

Student Language | Essential Vocabulary & Concepts ([The Concept Project](#))

- Substance
- Melting Point
- Boiling Point
- Freezing Point

I Understand Statements

- I understand that substances change state based on melting/freezing and boiling points.

I Can Statements | Skills

- I can safely explore the melting/freezing points of various substances.
- I can compare the melting/freezing and boiling points of various substances, including water.

KUSP 3M1.4

Learning Outcome	3M1 Students investigate and analyze how materials have the potential to be changed.
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Knowledge	Understanding	Skills & Procedures	Sample Activities & Resources What is Surface,Deep and Transfer	Assessments (formative)
<p>Substances are made of matter that has not been mixed with other matter, including water.</p> <p>The temperature at which a substance changes from solid to liquid is called the melting point.</p> <p>The temperature at which a substance changes from liquid to solid is called the freezing point.</p> <p>The melting and freezing points of a substance are the same temperature.</p> <p>The temperature at which a substance changes from liquid to gas is called the boiling point.</p> <p>The melting/freezing point of water is 0 °C.</p> <p>The boiling point of water is 100 °C.</p>	<p>Substances change state based on melting/freezing and boiling points.</p>	<p>Safely explore the melting/freezing points of various substances.</p> <p>Compare the melting/freezing and boiling points of various substances, including water.</p>	<p>Sample Surface Level Activities Substance</p> <ul style="list-style-type: none"> What is a substance? Compare the melting/freezing and boiling points of various substances, including water. <ul style="list-style-type: none"> Introduction to Comparing & Contrasting Comparing & Contrasting Templates <p>Sample Deep Level Activities</p> <ul style="list-style-type: none"> Melting, freezing and boiling points of liquids (experiment) <ul style="list-style-type: none"> Record Sheet After recording the observations, have students complete the conclusion below using the words 1) <i>melting/freezing point</i>, 2) <i>boiling point</i>, 3) <i>substance</i>, and 4) <i>state</i>. <div> <div>■ _____ change _____ based on their _____</div> <div>and _____.</div> <div>Have students justify their conclusions by referring to their observations.</div> </div> <p>Infusing Indigenous Knowledge into Curriculum Main Website Link Grade 3 Link</p> <p>Use the example of an ice fishing trip to discuss how breathing in an ice fishing tent results in condensation and evaporation.</p> <p>Other Resources</p> <ul style="list-style-type: none"> States of Matter Infographic (Requires free teacher subscription). STEAM: G3.1M-2: A Song of Ice and Fire by Red Deer Public Schools STEAM: G3.1M-3: Do You Steam What I Steam? by Red Deer Public Schools 	<p>Sample Formative Assessment</p> <ul style="list-style-type: none"> Solid, Liquid, Gas Assessment Melting/Boiling/Freezing Points Assessment <p>Sample Summative Assessment Gr. 3 Science MATTER: Safely explore the melting/freezing points of various substances with Scientific Methods - Edmonton Catholic Science Crates</p>

Resources

Additional Websites and Resources to Support learning




Indigenous Related:

[Nature Kids Alberta](#) - Alberta based nature booklets and nature interaction ideas, also First Nation, Metis and Inuit connections.

[Indigenous Land Based Learning](#) - Elementary Teachers' Federation of Ontario - Resource for Teachers Background Knowledge.

- [Indigenous People’s Atlas of Canada - The Inuit People](#) by [Canadian Geographic](#)

Picture Books:

- Videos:  [Learning from the Land](#)  [Creation Story](#)  (The MOTHER Earth Creation Story - Indigenous...)
- ***Lessons from Mother Earth*** by Elaine McLeod [Lessons from Mother Earth](#)
- ***Ne ĭethka Makochĭ Chach*** by Trudy Wesley [This is Our Home](#)

[Learning Circle: Classroom Activities on First Nations in Canada ages 4-7.](#)
Unit 4: Colours....learn how plants are used to make colours and explore the beadwork of Indigenous Peoples.
[Learning from the Land \(teacher information\)](#)

[Shared Learnings - K-10](#) - focuses on the diversity, depth, and integrity of the cultures of British Columbia Aboriginal peoples. It is a guide for teachers, developed in recognition of the need for classroom materials that can help all teachers provide students with knowledge of, and opportunities to share experiences with, BC Aboriginal peoples.
Source: Aboriginal Education Enhancements Branch, British Columbia Ministry of Education

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- [Plants, People and Climate Change | Little Green Thumbs 2023](#) - check this link for [Activities](#)

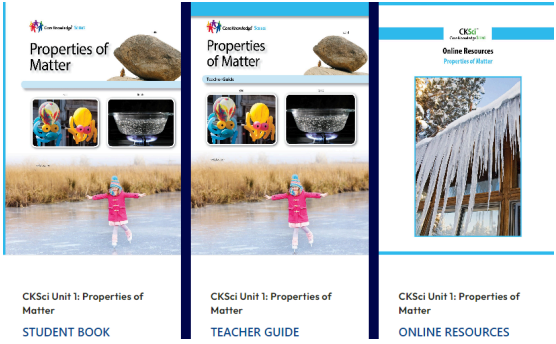
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- ***National Geographic:*** - enter your topic on the site to open specific files. Instructional Planning and Teaching in.
- Science - [IOWA Department of Education](#)

- [Elementary Ed. Resource Sharing](#) - this site has Inquiry Units and Teacher Tools for premade units of study. A great fit to most of our Alberta Curriculums! States of Matter is investigated through [Water Balloon in a Bottle Science Demonstration for Grade 3](#)

- [PBS Learning](#) - a variety of video libraries for most science topics at all grades. [States of Matter](#)

<ul style="list-style-type: none">• Science Teachers Association of Ontario - have similar units Outcomes to Alberta• Main Agriculture, Conservation and Forestry - site for plants and animal interactions and relationships. All grades.• Iowa Agriculture Literacy Foundation	
<p>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) There is no ubit book on the Water Cycle but an extensive lesson plan is found below: What's the Matter Resource Booklet</p> <p>What's the Matter accompanying Sheets - download the documents to open them</p> <p>What's the Matter Assessment</p> <p>About this unit What's the matter Matter is all around us. It can be as small as the particles that make up the tiniest cell in our skin or as large as the whole galaxy. Anything that takes up space and has mass is called matter. The matter that we experience every day and the matter that we are made of is only a tiny fraction of the matter that exists in the universe. By investigating and understanding matter, scientists are able to find out more about the universe and its possibilities. The What's the matter? unit is an ideal way to link science with literacy in the classroom. Through hands-on investigations, students explore the properties of solids, liquids and gases, and plan and conduct an investigation of how the properties of materials change with temperature.</p> <p>Alternate Resource</p> <p>Core Knowledge</p> <div></div> <p>Student Book Link Teacher Guide Link Online Resources Link</p>	<p>Gizmos (Teacher Login Required) New Learn Alberta: <i>no Grade 3 match</i> ExploreLearning Gizmos Site: Phases of Water</p> <p>Request a Gizmos account: alberta@explorellearning.com</p>

Click to jump!

KUSPs	3M1.1	3M1.2	3M1.3	3M1.4	3M1.5	3M1.6	
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KUSPs 3M1.5

Prerequisite Knowledge

- Students know:
- the term cycle from Living Systems - review
 - the three states of matter specifically related to water

Misconceptions

- water cycle only includes freezing and melting processes of water,
- water only evaporates from seas and oceans,
- water cycle only includes rain and snow,
- rain falls only when clouds evaporate.

Source: ScienceAlert.net. Science Students' Misconceptions of the Water Cycle According to their Drawings by Osman Cardak. Department of Science Education, Ahmet Kelesoglu Faculty of Education, Selcuk University, Konya, Turkey

Student Language | Essential Vocabulary & Concepts [\(The Concept Project\)](#)

- Cycle
- Evaporation
- Condensation
- Precipitation

I Know Statements

- I know that the water cycle is a process in which water on Earth moves continuously between bodies of water, land, and the atmosphere.
- I know that the water cycle, water changes state from a liquid to a gas through evaporation, forms clouds through condensation, then falls back to Earth in a liquid or solid state (precipitation).
- I know that water can change state from solid to liquid and back again.
- I know that water can change state from liquid to gas and back again.
- I know tha in Alberta, the surfaces of many bodies of water change from liquid in the summer to solid in the winter.

I Understand Statements

- I understand that the water on Earth moves continuously in a cycle.

I Can Statements | Skills

- I can describe and diagram the changes of state of water using the water cycle.
- I can identify examples of changes in the state of water in local environments.
- I can discuss ways to respect water in local environments.
- I can discuss the importance of safety around bodies of water that have a surface of ice.
- I can discuss the importance of safety around bodies of water in different seasons.

KUSP 3M1.5

Learning Outcome	3M1 Students investigate and analyze how materials have the potential to be changed.
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Knowledge	Understanding	Skills & Procedures	Sample Activities & Resources What is Surface,Deep and Transfer	Assessments (formative)
<p>The water cycle is a process in which water on Earth moves continuously between bodies of water, land, and the atmosphere.</p> <p>In the water cycle, water changes state from a liquid to a gas through evaporation, forms clouds through condensation, then falls back to Earth in a liquid or solid state (precipitation).</p> <p>Water can change state from solid to liquid and back again.</p> <p>Water can change state from liquid to gas and back again.</p>	<p>The water on Earth moves continuously in a cycle.</p>	<p>Describe and diagram the changes of state of water using the water cycle.</p> <p>Identify examples of changes in the state of water in local environments.</p>	<p>Sample Surface Level Activities Cycle</p> <ul style="list-style-type: none"> What is a cycle? <p>Sample Deep Level Activities</p> <ul style="list-style-type: none"> Make A Miniature Water Cycle Model Cumulus Maximus: Test WEATHER you can make your own cloud! <ul style="list-style-type: none"> Cloud Experiment Reflection Sheet Natural Water Cycle (Game) STEAM: G3.1M-5: Creating Our Own Water Cycle by Red Deer Public Schools <p>Infusing Indigenous Knowledge into Curriculum Main Website Link Grade 3 Link</p> <p>Use the example of an ice fishing trip to illustrate how and why breathing in an ice fishing tent results in condensation and evaporation. Discuss ways to respect water (e.g., safety on the ice while fishing; effects of non-native species invading clean water; reducing pollution, algae bloom). Invite Elders to share stories of change.</p>	<ul style="list-style-type: none"> Students can make and explain an infographic that represents the water cycle. Water Cycle Relay Race - Students will review the water cycle through a relay race vocabulary game. <ul style="list-style-type: none"> Source: Utah State University: Water Quality Extensions - Lesson Plans Water Cycle Drama - students act out the water cycle! <ul style="list-style-type: none"> Source: Utah State University: Water Quality Extensions - Lesson Plans
		<p>Discuss ways to respect water in local environments.</p>	<p>Sample Deep Level Activities</p> <ul style="list-style-type: none"> Using Water Responsibly Video by Edmonton Public Schools Curriculum and Learning Supports <ul style="list-style-type: none"> Video Reflection Worksheet - Using Water Responsibly Exploring Liquid 5: Water is important to many things (EPSB Teacher support pack) by Edmonton Public Schools 	
<p>In Alberta, the surfaces of many bodies of water change from liquid in the summer to solid in the winter.</p>		<p>Discuss the importance of safety around bodies of water that have a surface of ice.</p> <p>Discuss the importance of safety around bodies of water in different seasons.</p>	<ul style="list-style-type: none"> Winter Water Safety Booklet by City of Toronto <ul style="list-style-type: none"> lots of great information and activities to inform lessons. WhaleTale Videos and activity guide by American Red Cross <ul style="list-style-type: none"> for safety around water Water Safety Activity Book by New South Wales 	<ul style="list-style-type: none"> Students can respond to this question: How does knowledge of the water cycle keep us safe around large bodies of water?

Resources

Additional Websites and Resources to Support learning

Indigenous Related:

📖 Gr. 1 Earth Systems December

Students learn about caring for nature through an Indigenous lens.

[“Imagine if” “When we are kind” Indigenous connection](#)

(Edmonton Catholic Curriculum Crate)

📺 [Children’s Treaty 7 Land Acknowledgment](#)

[Nature Kids Alberta](#) - Alberta based nature booklets and nature interaction ideas, also First Nation, Metis and Inuit connections.

[Indigenous Land Based Learning](#) - Elementary Teachers’ Federation of Ontario - Resource for Teachers Background Knowledge.

- [Indigenous People’s Atlas of Canada](#) - [The Inuit People](#) by [Canadian Geographic](#)

Picture Books:

- Videos: 📺 [Learning from the Land](#) 📺 [Creation Story](#) 🌐 (The MOTHER Earth Creation Story - Indigenou...)
- [Lessons from Mother Earth](#) by Elaine McLeod [Lessons from Mother Earth](#)
- [Ne Îethka Makochî Chach](#) by Trudy Wesley [This is Our Home](#)

[Learning Circle: Classroom Activities on First Nations in Canada ages 8-11.](#)

Unit 4: Colours....learn how plants are used to make colours and explore the beadwork of Indigenous Peoples.

[Learning from the Land \(teacher information\)](#)

[Shared Learnings](#) - **K-10** - focuses on the diversity, depth, and integrity of the cultures of British Columbia Aboriginal peoples. It is a guide for teachers, developed in recognition of the need for classroom materials that can help all teachers provide students with knowledge of, and opportunities to share experiences with, BC Aboriginal peoples. Source: Aboriginal Education Enhancements Branch, British Columbia Ministry of Education

[Nature Kids Alberta](#) - Alberta based nature booklets and nature interaction ideas, also First Nation, Metis and Inuit connections.

Grade 3: Matter Specific

- [Grade 3 Matter](#) - developed by Red Deer Public Schools(SLEAKs, SPAMs and SWAGs)
- View the **Matter - Grade 3** [Video and slide deck](#) found on the ARPDC site for additional suggestions and resources.
- [Matter and the Scientific Method Unit Plan](#) - This sample unit plan integrates the organizing ideas of Matter and the Scientific Methods. This phenomenon based unit, focuses on investigation to help students answer the questions: “What makes a bouncy ball so bouncy?”
- [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.[Water Cycle](#)

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 RDPSPD. 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 RDPSPD 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

Websites and Resources to Support Planning

Inclusion - Best Practices Meeting the Needs of [All Learners in Science](#)

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.

<ul style="list-style-type: none"> • PBS Learning Media - PBS Learning Media - a large selection of science related resources. Review by subject, subtopic and grade. For Grade 3 selections check out the following: Water Cycle • ACS American Chemistry for Life - this site contains lessons and Inquiry Activities for Grades K-8 - Water Cycle • 7 Amazing Ideas for Teaching the Water Cycle - The Science Penguin by Ariane Huddleston. • Super Staar - Water Cycle • Hand2Mind Science Activities - Lessons and Investigations for K-5 students • Alberta Parks - Alberta Parks - ABC Nature Walk (link the walk to different materials that students find and their purpose). • Science Curriculum Wayfinder - Grade 3 - created by the University of Alberta • Water Cycle Created by Ontario Teachers Federation: <i>It's About Time</i> Series • Teach Engineering - STEM Learning K-12. Water Cycle and more! • Science North - this site provides teachers with a weekly lesson and video covering the major Organizing Ideas. Check the site for resources that match your unit plan.- Water • Science Buddies - select from a variety of activities, STEM applications, Investigations and articles.Water Cycle Water Cycle Lessons and Investigations • Edmonton Catholic Pacing Guide - January/February <p>General:</p> <p>Grade 3: Sites good for a variety of Organizing Ideas</p> <ul style="list-style-type: none"> • What Are Storylines? - Next generation Science Storylines • <i>K5 Learning</i> provides free worksheets (Water Cycle) and additional ones through subscription - sign up for free membership if using the resources.(surface level activities) • cK-12 - Free STEM teaching resources - provides a set of online science textbooks as open educational resources. Review Chapter two for grade level material. • 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. • 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. • Ulnooweg Education Centre offers science units and an Indigenous Perspective Sign in for a free account through the Resources section into Backyard Science: .. • 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. 	
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<ul style="list-style-type: none">● 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.● Study Jams video presentation as well as online quiz .Select <i>Ecosystems</i> and then Water Cycle● National Geographic: - enter your topic on the site to open specific files. Instructional Planning and Teaching.● Science - IOWA Department of Education● Elementary Ed. Resource Sharing - this site has Inquiry Units and Teacher Tools for premade units of study. A great fit to most of our Alberta Curriculums! States of Matter is investigated through Water Cycle Games and Inquiries● PBS Learning - a variety of video libraries for most science topics at all grades.Water Cycle● Science Teachers Association of Ontario - have similar units Outcomes to Alberta● Main Agriculture, Conservation and Forestry - site for plants and animal interactions and relationships. All grades.● Iowa Agriculture Literacy Foundation	
<p>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) <i>No applicable one's for this KUSP</i></p> <p>Alternate resources:</p> <p>3rd grade Weather and Water Unit (select appropriate and relevant lessons) Source: Williams Centre for Learning and Action-Education Outreach. These lessons were revamped for the North Adams Public School System during Summer 2014 by Cindy Le, Dvid Trivedi, Veronica Gould, and Katie Swoap.</p> <p>The Water Cycle lesson Plans</p> <p>Source: Sydney WATER. Publication number SW29 09/21 © Sydney Water. All rights reserved.</p> <p>Additional Sites for Science Water Lessons</p>	<p>Gizmos (Teacher Login Required) New Learn Alberta: <i>no Grade 3 match</i> ExploreLearning Gizmos Site: Water Cycle</p> <p>Request a Gizmos account: alberta@explorellearning.com</p>

Click to jump!

KUSPs	3M1.1	3M1.2	3M1.3	3M1.4	3M1.5	3M1.6	
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[Literature Connections](#)

KUSPs 3M1.6

Prerequisite Knowledge

Students should know:

- States of matter and how to describe them

Misconceptions

- A common misconception is that physical changes are reversible and chemical changes are not. This idea is usually true but there are exceptions such as the physical change of cracking an egg (the egg is now changed its physical appearance but not its chemical make-up) and the chemical change of mixing salt water which breaks apart to create ions (new chemical species) but when we evaporate the water we can get back the salt. If we dissolve sugar, we don't necessarily make new chemical species, thus this process would be better understood as a physical change.
- Another misconception is that physical changes do not involve heat and all chemical changes do. Again the idea is mostly true but there are exceptions such as the physical change of popping corn, or melting ice which all involve heat, while the chemical change of metal rusting over a long period of time seems to involve no heat at all (in truth, this reaction does produce heat, but very slowly, thus not easily noticed). When giving examples of chemical change teachers often use cooking and burning which indirectly leads students to the misconception that only chemical change can involve heat. Adding in examples of physical changes, such as changes in state (ice, liquid, and steam for example) with heat can help show students, heat is not only for chemical changes.

Source: [Changes that Matter: Physical and Chemical Change](#). Fraser, N. 2013 [CTI](#) Fellow Davidson Elementary

I Know Statements

- I know that a reversible change is a change that can be undone, such as melting or freezing.
- I know that a permanent change is a change that cannot be undone, such as cooking an egg or baking a cake.

Student Language | Essential Vocabulary & Concepts

[\(The Concept Project\)](#)

- Change
- Reversible Change
- Permanent Change

I Understand Statements

- I understand that the changes to materials or substances can be permanent or reversible, depending on the properties of the given materials or substances.

I Can Statements | Skills

- I can discuss examples of changes to materials or substances that are permanent and examples of changes to materials or substances that are reversible.
- I can safely perform experiments on various materials and substances and classify changes as permanent or reversible.

KUSP 3M1.6

Learning Outcome	3M1 Students investigate and analyze how materials have the potential to be changed.			
Knowledge	Understanding	Skills & Procedures	Sample Activities & Resources What is Surface,Deep and Transfer	Assessments (formative)
<p>A reversible change is a change that can be undone, such as melting or freezing.</p> <p>A permanent change is a change that cannot be undone, such as cooking an egg or baking a cake.</p>		<p>Discuss examples of changes to materials or substances that are permanent and examples of changes to materials or substances that are reversible.</p>	<p>Sample Surface Level Activities Change Reversible Change Permanent Change</p> <ul style="list-style-type: none"> What is Change? Reversible and Permanent Change <p>Sample Deep Level Activities</p> <ul style="list-style-type: none"> Reversible and Irreversible Changes: Understand Differences with Examples <ul style="list-style-type: none"> Infusing Indigenous Knowledge into Curriculum <ul style="list-style-type: none"> Main Website Link Grade 3 Link <p>Describe changes with the example of water to ice and ice to water (e.g., preserving fish in water; boiling fish to cook it). Discuss how changes in water supplies affect health and well being. Discuss the effects of chemicals and pesticides on humans.</p> <p>Local/Nearby Options for Experiential Learning Excursions</p> <p>Walking field trip to observe/experience soil in different spaces on the school grounds or in the local community. Students dig and feel to try to identify components that make up the soil, and how soil is different in different places.</p> <p>Other Resources</p>	<p>Formative Assessment</p> <ul style="list-style-type: none"> Permanent and Reversible change
	<p>Changes to materials or substances can be permanent or reversible, depending on the properties of the given materials or substances.</p>	<p>Safely perform experiments on various materials and substances and classify changes as permanent or reversible.</p>	<p>Sample Deep Level Activities</p> <ul style="list-style-type: none"> Creating the relationship between materials, substances, permanent change, reversible change, and properties. <ul style="list-style-type: none"> Activity Reversible and Irreversible Changes: Understand Differences with Examples <p>Infusing Indigenous Knowledge into Curriculum</p>	<ul style="list-style-type: none"> HEATING, COOLING, AND REVERSIBILITY: Changes <ul style="list-style-type: none"> Source:Digitalcommons.IMSA.edu - Illinois Mathematics and Science Academy

			<div><div><div>◦ Main Website Link Grade 3 Link</div></div><div>Describe changes with the example of water to ice and ice to water (e.g., preserving fish in water; boiling fish to cook it). Discuss how changes in water supplies affect health and well being. Discuss the effects of chemicals and pesticides on humans.</div><div><div>Local/Nearby Options for Experiential Learning Excursions</div><div><ul style="list-style-type: none">• Walk around the schools neighborhood. Student look for examples of permanent change and reversible change.</div></div><div>Other Resources</div></div>	
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Resources

Additional Websites and Resources to Support learning

Indigenous Related:

📖 Gr. 1 Earth Systems December

Students learn about caring for nature through an Indigenous lens.
“Imagine if” “When we are kind” [Indigenous connection](#)
(Edmonton Catholic Curriculum Crate)

📺 [Children’s Treaty 7 Land Acknowledgment](#)

[Nature Kids Alberta](#) - Alberta based nature booklets and nature interaction ideas, also First Nation, Metis and Inuit connections.

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Picture Books:

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- *Ne Îethka Makochî Chach* by Trudy Wesley [This is Our Home](#)

[Learning Circle: Classroom Activities on First Nations in Canada ages 4-7.](#)
Unit 4: Colours....learn how plants are used to make colours and explore the beadwork of Indigenous Peoples.
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General:

[Nature Kids Alberta](#) - Alberta based nature booklets and nature interaction ideas, also First Nation, Metis and Inuit connections.

[Alberta Institute for Wildlife Conservation](#) - Online wildlife educational resources

[Plant and Animal Interdependence](#) -Plant and animal interdependence activities

Grade 3: Matter Specific

- [Grade 3 Matter](#) - developed by Red Deer Public Schools(SLEAKs, SPAMs and SWAGs)
- View the **Matter - Grade 3** [Video and slide deck](#) found on the ARPDC site for additional suggestions and resources.
- [Change in Matter](#). Source:Leading Learning – Making the Australian Curriculum work for us | Conceptual narrative: Change of matter Year 6 | DECD Teaching and Learning Services 6

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](#)

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[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

Websites and Resources to Support Planning

Inclusion - Best Practices Meeting the Needs of [All Learners in Science](#)
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.

- [Physical Changes in Matter](#):Natural Science #3 - Source: A WordPress.com Website.
- [DK Chemical Reactions -Reversible and Irreversible Changes](#) - Science / E.encyclopedia Science / [MATTER AND MATERIALS](#) ("https://www.factmonster.com/cite-page" Fact Monster. © 2000–2017 Sandbox Networks, Inc., publishing as Fact Monster.
- [What are Irreversible Changes?](#) - Source: Bitesize BBC-Part of [ScienceMaterials](#)
- [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. [Matter videos and activities](#).
- **PBS Learning Media** - [PBS Learning Media](#) - a large selection of science related resources. Review by subject, subtopic and grade. For Grade 3 selections check out the following general [link](#) or [States of Matter](#).
- [ACS American Chemistry for Life](#) - this site contains lessons and Inquiry Activities for Grades K-8 - [States of Matter](#)
- [Super Staar](#) - States of Matter
- **Hand2Mind Science Activities** - Lessons and Investigations for K-5 students
- **Alberta Parks** - [Alberta Parks](#) - ABC [Nature Walk](#) (link the walk to different materials that students find and their purpose).
- Science Curriculum Wayfinder - [Grade 3](#) - created by the University of Alberta
- [Matter](#) Created by Ontario Teachers Federation: *It's About Time* Series
- [Teach Engineering](#) - STEM Learning K-12. [States of Matter](#) and more!
- [Science North](#) - this site provides teachers with a weekly lesson and video covering the major Organizing Ideas. Check the site for resources that match your unit plan.-
- [Science Buddies](#) - select from a variety of activities, STEM applications, Investigations and articles. [States of Matter](#)
- Edmonton Catholic Pacing Guide - [January/February](#)
- [Matter and the Scientific Method Unit Plan](#) - This sample unit plan integrates the organizing ideas of Matter and the Scientific Methods. This phenomenon based unit, focuses on investigation to help students answer the questions: "What makes a bouncy ball so bouncy?"

General:

Grade 3: Sites good for a variety of Organizing Ideas

- What Are Storylines? - [Next generation Science Storylines](#)
- *K5 Learning* provides [free worksheets](#) (States of Matter) and additional ones through subscription - sign up for free membership if using the resources.(surface level activities)
- [cK-12 - Free STEM teaching resources](#) - provides a set of online science textbooks as open educational resources. Review Chapter two for grade level material.
- **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. [Matter](#)
- **Alberta Agriculture** - Agriculture education k-12 <https://www.alberta.ca/agricultural-education.aspx>

<p>Resources here are based on the old Topics but there are still some amazing linkages to our new curriculum.</p> <ul style="list-style-type: none">• Ulnooweg Education Centre offers science units and an Indigenous Perspective Sign in for a free account through the Resources section into Backyard Science: Select Properties of Matter..• Matter Concepts• 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.• Study Jams video presentation as well as online quiz .Select ‘Matter’ from the “all Topics’ button.• National Geographic: - enter your topic on the site to open specific files. Instructional Planning and Teaching in.• Science - IOWA Department of Education• Elementary Ed. Resource Sharing - this site has Inquiry Units and Teacher Tools for premade units of study. A great fit to most of our Alberta Curriculums! States of Matter is investigated through Water Balloon in a Bottle Science Demonstration for Grade 3• PBS Learning - a variety of video libraries for most science topics at all grades. States of Matter• Science Teachers Association of Ontario - have similar units Outcomes to Alberta• Main Agriculture, Conservation and Forestry - site for plants and animal interactions and relationships. All grades.• Matter and the Scientific Method Unit Plan - This sample unit plan integrates the organizing ideas of Matter and the Scientific Methods. This phenomenon based unit, focuses on investigation to help students answer the questions: “What makes a bouncy ball so bouncy?”	
<p>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) <i>No applicable one’s for this KUSP</i> Alternate Resource: see below</p> <p>Core Knowledge</p>	<p>Gizmos (Teacher Login Required) New Learn Alberta: no Grade 3 match Request a Gizmos account: alberta@explorellearning.com</p>

CKSci Unit 1: Properties of Matter

[STUDENT BOOK](#)

CKSci Unit 1: Properties of Matter



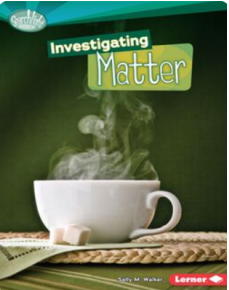
[TEACHER GUIDE](#)

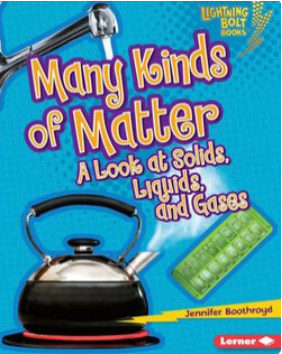
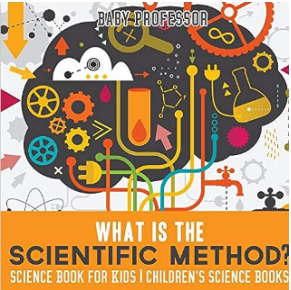
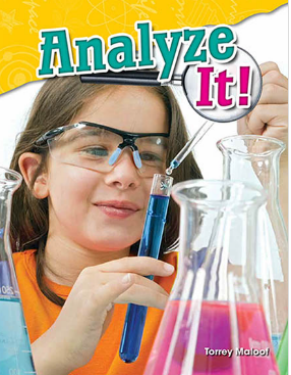
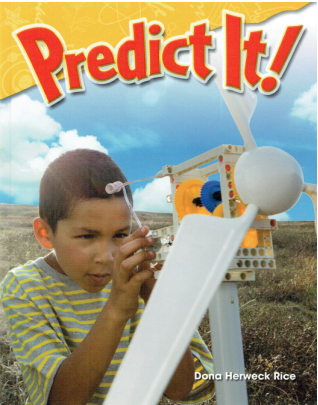
CKSci Unit 1: Properties of Matter


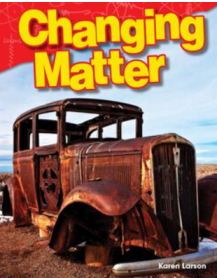
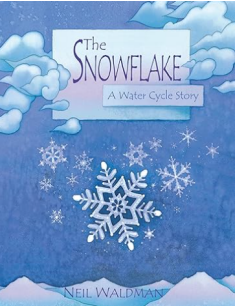
[ONLINE RESOURCES](#)

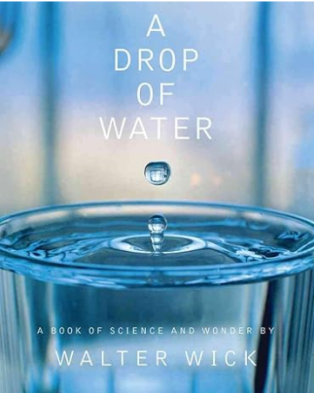
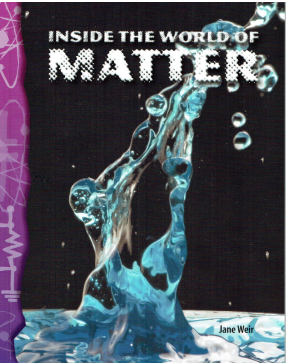
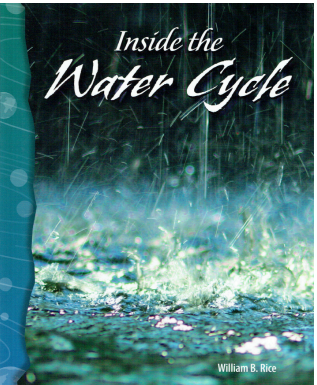
Student Book [Link](#) Teacher Guide [Link](#) Online Resources [Link](#)

Literature Connections

KUSPs	3M1.1	3M1.2	3M1.3	3M1.4	3M1.5	3M1.6	
Title & Author				Format (Picture Book, Novel, Non-fiction, other)	Publisher & ISBN	Book & Numbered Outcome Link	
<p><i>Natural or Man-Made by Kelli Hicks</i></p> <p>A book to help students distinguish between natural and man-made materials and products.</p>				Picture Book, Non-Fiction	Rourke Educational Media Carson Dellosa Pub Co Inc 10-9781617419584 13-978-1617419584	 3M1.1 EPIC YouTube - 03 MYTV PDF Version	
<p><i>What a Scientist Sees by Dona Herweck Rice</i></p> <p>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</p>				Picture Book Non-Fiction	Teacher Created Materials Science Readers:Content and Literacy Series Available through Pearson Canada 10-9781480746916 13-978-1480746916	 KM1-4M1	
<p><i>Investigating Matter by Sally M. Walker</i></p> <p>Solids, liquids, and gases are the three states of matter. But have you ever made matter change from one state to another? Or seen how even invisible matter takes up space? Includes hands-on experiments, interesting photos, and useful diagrams for ages 8-10.</p>				Picture Book Non-Fiction	Lerner Publishing Group 10- 0761378758 13-978-0761378754	 3M1.2 1.3, 1.5 Epic	

<p>Many Kinds of Matter: A Look at Solids, Liquids and Gasses by Jennifer Boothroyd</p> <p>Water flows. Rocks are solid. Wind flows. Learn all about solids, liquids and gases in this cool ‘Many Kinds of Matter: A Look at Solids, Liquids, and Gases’ book for kids. Understand the ‘matter’ behind these forms and learn their unique features. Visually enriched with images of pancakes, balloons and yummy syrup, the ‘Many Kinds of Matter: A Look at Solids, Liquids, and Gases’ book is super entertaining and makes learning fun. From what fizzes out of soda cans to what makes water turn into ice, the ‘Many Kinds of Matter: A Look at Solids, Liquids, and Gases’ kids book covers all bases of matter. The fun facts in this cool ‘Many Kinds of Matter: A Look at Solids, Liquids, and Gases’ kids book helps kids fall in love with matter</p>	Picture Book, Fiction	Lerner Publishing ISBN 13-9780761372257	 3M EPIC
<p>What is the Scientific Method? by Baby Professor</p> <p>The scientific method is used to solve many great mysteries in natural science. It is a long process that includes systematic observation, measurement and experiment. It is then followed by formulation, testing and modification of hypotheses.</p>	Picture Book, Non-Fiction	Baby Professor 10-1541912217 13- 978-1541912212	 1M - 6M
<p>Analyze It! by Torrey Maloof</p> <p>Introduce students to the scientific method with this science reader that features easy-to-read text. This book teaches important scientific topics and vocabulary terms including hypothesis, data, experiment, conclusion, method, research, and more. Nonfiction text features include a glossary, index, and detailed images to facilitate close reading and help students connect back to the text. Aligned to state and national standards, the book also includes a fun and engaging science experiment to develop critical thinking and help students practice what they have learned.</p>	Picture Book, Non-Fiction	Shell Educational Publishing Available through Pearson 10-1480746134 13-978-1480746138	 SM
<p>Predict It! by Dona Herweck Rice</p> <p>Are you good at predicting? Have you ever made a scientific prediction? Learn all about scientific predictions and the steps that scientists take to make good predictions in this fact-filled book. High-interest text paired with colorful images and graphics fill the pages of this book to engage students from cover to cover. A Think Like a Scientist activity that supports STEM instruction is included at the end of the book for students to use what they learned in the text and apply that knowledge to the activity. A helpful glossary, table of contents, and index are also included for additional support.</p>	Picture Book, Non-Fiction	Teacher Created Materials Available through Pearson, Canada 10-1480746525 13-978-1480746527	

			Gr 2-5 SM
<p><i>Melting Matter by Amy S. Hansen</i></p> <p>Intermediate readers investigate what happens when objects experience different conditions (i.e. hot/cold, wet/dry).</p>	Picture Book, Non-Fiction	<p>Carson Dellosa Pub Co Inc</p> <p>10-1617419540 13-978-1617419546</p>	 <p>3M1.2 - check EPIC</p>
<p><i>Changing Matter by Karen Larson</i></p> <p>Matter is all around us! Everything we see is made up of matter - including this e-book and even our bodies. Explore the different states of matter, its properties, how it changes, and much more in this fact-filled e-book! Third-grade students will enjoy learning about solids, liquids, gases, and plasma as well as physical and chemical changes through this high-interest informational text filled with vibrant photographs. A hands-on "Think Like a Scientist" lab activity is included at the end of the e-book, providing students with an opportunity to apply what they've learned in the text. Helpful diagrams and text features, such as a glossary and index, are also included to improve content-area literacy and support STEM education.</p>	Picture Book, Non-Fiction	<p>Teacher Created Materials</p> <p>Available through Pearson</p> <p>10-1480746428 13-978-1480746428</p>	 <p>3M/4M EPIC</p>
<p><i>What is the World Made of? All About Solids, Liquids and Gases by Kathleen Weidner Zoehfeld and Paul Meisel</i></p> <p>This clear and appealing science book for early elementary age kids, both at home and in the classroom, uses simple, fun diagrams to explain the difference between solids, liquids, and gases.</p>	Picture Book, Non-Fiction	<p>HarperCollins</p> <p>10-0062381954 13-978-0062381958</p>	 <p>3M1.5</p>
<p><i>The Snowflake: A Water Cycle Story by Neil Waldman</i></p> <p>With a double-page spread for each month, this book describes the journey of a single drop of water throughout the year.</p>	Picture Book, Non-Fiction	<p>Millbrook Press</p> <p>10-0761323473 13-978-0761323471</p>	 <p>3M1.5 YouTube - Read Aloud - Grow Portland</p>

<p><i>A Drop of Water by Walter Wick</i></p> <p>The most spectacular photographs ever created on the subject of water appear in this unique science book by Walter Wick. The camera stops the action and magnifies it so that all the amazing states of water can be observed — water as ice, rainbow, steam, frost, dew. Readers can examine a drop of water as it falls from a faucet, see a drop of water as it splashes on a hard surface, count the points of an actual snowflake, and contemplate how drops of water form clouds. Evaporation, condensation, capillary, attraction, and surface tension are explained through simple text and illustrated by pictures that reveal water in its many awesome transformations. The last pages of the book feature experiments that welcome the reader into the world of scientific investigation. In A Drop of Water, Walter Wick embraces two disciplines, art and science, and stimulates the reader as aesthetic and scientific observer.</p>	Picture Book, Non-Fiction	Scholastic Press	 <p>3M1.5 YouTube Read Aloud - Jennifer Ahlors</p>
<p><i>Inside the World of Matter by Jane Weir</i></p> <p>Everything around us is made up of matter. Understanding how matter can change properties and how the position of molecules determines the state of matter helps explain everything from energy to why certain substances have chemical reactions when mixed together.</p>	Picture Book, Non-Fiction	Shell Educational Publishing	 <p>3M EPIC</p>
<p><i>Inside the Water Cycle by William B Rice</i></p> <p>Readers will learn the various steps of the water cycle—including evaporation, condensation, and precipitation. Featuring plenty of stunning images, colourful charts and graphs, accessible glossary and index, and easy-to-read text, readers will learn about different forms and types of water such as rain, sleet, snow, freshwater, and saltwater. Readers will also learn about clouds, the different types, how they are formed, and what role they play in the water cycle. An engaging hands-on activity allows readers to explore weather and science even further!</p>	Picture Book, Non-Fiction	Shell Educational Publishing	 <p>3M1.5</p>