

Bachelor of Education (Elementary) & Bachelor of Education (Secondary) STEM Unit Plan Template

Unit Title: <u>The Water Cycle</u>	Number of Lessons: <u>8</u>	Time (in weeks): <u>2</u>
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Rationale

This unit helps Grade 2 students learn about the water cycle in a hands-on and engaging way that connects to their everyday lives. Since students see and use water all the time, it makes the learning meaningful and easier to understand. Through games, experiments, movement, and discussion, students explore ideas like evaporation, condensation, precipitation, collection, and run-off while building curiosity and observation skills. The unit also includes Indigenous perspectives by teaching that water is something to respect and care for, helping students think about their responsibility to the environment. Overall, it supports different learners and encourages active, fun learning.

Overview:

This unit introduces Grade 2 students to the water cycle and why water is important for all living things. Students will explore where water is found, how it moves through the environment, and the different stages of the water cycle like evaporation, condensation, and precipitation. The lessons are hands-on and interactive, using experiments, games, movement, and art to help students understand the concepts in a fun and meaningful way. Students will also learn about caring for water and respecting it, connecting to Indigenous perspectives. By the end of the unit, students will be able to explain the water cycle and show their understanding through drawings, models, and discussions.

CORE COMPETENCIES

Communication	Thinking	Personal & Social
<ul style="list-style-type: none"> ● Communicating Students communicate their ideas about the water cycle through drawings, discussions, and simple explanations. They describe their thinking using developing vocabulary and share observations from experiments and activities. ● Collaborating Students work with peers through turn-and-talk activities, group or partner discussions and work, and shared 	<ul style="list-style-type: none"> ● Critical thinking Students ask questions, make predictions, and reflect on their understanding of where water goes. They revisit their initial ideas from the first lesson, then adjust their thinking based on new learning and observations. ● Creative thinking Students demonstrate creative thinking by representing the water cycle through drawings, movement, and storytelling. 	<ul style="list-style-type: none"> ● Positive personal and cultural identity Students begin to understand their role in caring for water is important and impactful. They reflect on their own experiences with water and develop awareness of how their actions can impact the environment. ● Personal awareness and responsibility Students connect learning to their own lives and experiences with water in their homes and

<p>investigations. They listen to others' ideas and perspectives to build on their own learning and participate respectfully in hands-on activities.</p>	<p>They use imagination to act out processes like evaporation, condensation, and precipitation and make connections to real-life experiences.</p>	<p>communities. Indigenous perspectives of water as a life-giving resource help students build respect and appreciation for different ways of knowing.</p> <ul style="list-style-type: none"> • Social responsibility Students develop an understanding that water is shared by all living things and must be cared for. Through discussion and activities, they begin to recognize the importance of respecting and protecting water in their environment
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BIG IDEAS

(multiple subject areas for integrated unit)

Subject Name:

Science Grade 2:

"Water is essential to all living things and cycles through the environment"

LEARNING STANDARDS

Curricular Competencies	Content
<p>Questioning & predicting:</p> <ul style="list-style-type: none"> - CC1-Demonstrate curiosity and ask questions about the world - CC2-Observe objects and events in familiar contexts <p>Planning & conducting:</p> <ul style="list-style-type: none"> - CC6- Safely manipulate materials to test ideas - CC7-Make simple predictions <p>Processing & analyzing data and information:</p> <ul style="list-style-type: none"> - CC11- Compare observations with predictions through discussion 	<ul style="list-style-type: none"> - C7- Water sources (lakes, rivers, oceans, rain, groundwater) - C8- The water cycle (evaporation, condensation, precipitation, runoff, collection) - C9- Water conservation (individual and community responsibilities) - C10- Local First Peoples knowledge of water

<p>Evaluating:</p> <ul style="list-style-type: none"> - CC14- Consider some environmental consequences of their actions <p>Applying & innovating:</p> <ul style="list-style-type: none"> - CC15- take part in caring for self, family, classroom and school through personal approaches <p>Communicating:</p> <ul style="list-style-type: none"> - CC18- Communicate observations and ideas using oral or written language, drawing, or role-play - CC19- Express and reflect on personal experiences of place 	
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Prerequisite Concepts and Skills:

Before starting this unit, students should have some basic understanding that water exists in different places (like lakes, rivers, rain, and snow) and that all living things need water to survive. They should also have some experience with simple observation and sharing their ideas through drawing, speaking, or writing. Basic classroom skills like listening, following instructions, working with others, and safely using materials (like during simple experiments) are also important for this unit.

Teacher Preparation Required:

Lesson #	Teacher Preparation Required (See Unit Plan Sample)
Lesson 1	<p>Water Cycle Intro & Vocabulary:</p> <ul style="list-style-type: none"> ● Preview <i>The Great Big Water Cycle Adventure</i> book and plan stopping points for guided questioning ● Prepare the read aloud ● Prepare a simple water cycle poster to use as a 'story map' while reading ● Prepare chart paper or whiteboard space for class brainstorming ● Prepare key vocabulary ready to write or display on board ● Gather student materials for 'diagnostic assessment drawing' (paper, pencil, crayons) ● Plan key discussion questions and prompts (puddle inquiry, water sources) ● Set up exit ticket materials (pre-made slips with prompts or just sticky note/pencil)
Lesson 2	<p>States of Water & The Sun's Role:</p> <ul style="list-style-type: none"> ● Gather materials for the different forms of water: <ul style="list-style-type: none"> ○ Ice (freeze in school freezer the day before lesson) ○ Water and clear containers ○ kettle/warm water with steam ● Ensure there is a sunny window available ● Display word bank ● Plan guiding questions for states of water

	<ul style="list-style-type: none"> ● Prepare drawing materials for student representation ● Prepare ziplock bag water model for ongoing reference <ul style="list-style-type: none"> ○ Add small amount of water ○ Tape to a sunny window (will refer to it once we add vocabulary)
Lesson 3	<p>Evaporation:</p> <ul style="list-style-type: none"> ● Create and display word bank ● Ensure there is space for movement activity (evaporation) ● Set up centres with all the materials ● timer ● Find a sunny and shaded location ● Prepare a simple prediction/observation sheet ● Prepare drawing/ sentence sheet ● Plan real-life examples to connect to students
Lesson 4	<p>Condensation:</p> <ul style="list-style-type: none"> ● Preview <i>How Cloud Became a Cloud</i> and plan stopping points (maybe only read half the book and continue with it for precipitation) ● Ensure there is still ice in freezer from lesson 2 ● Gather materials for demonstration/experiment: <ul style="list-style-type: none"> ○ Clear cups ○ Warm water ○ Small plate/lid ○ Ice cubes ○ Paper towel for spills ● Set up condensation demo area so everyone can see ● Prepare simple observation sheet (or continued from evaporation sheet) ● Review and display word bank ● Plan space for movement activity (forming clouds)
Lesson 5	<p>Precipitation (Rain in a Jar Experiment):</p> <ul style="list-style-type: none"> ● Gather materials for experiment: <ul style="list-style-type: none"> ● Clear jars/cups ● Water ● Shaving cream ● Food colouring ● Droppers <ul style="list-style-type: none"> - Test the experiment beforehand - Set up materials in bins for easy use - Have paper towels ready for spills ● Prepare simple step-by-step instructions (visual if possible) ● Prepare observation sheet or sentence starters ● Review and display word bank ● Plan a few guiding questions about rain and clouds ● Ensure space for movement activity (rainstorm game)
Lesson 6	<p>Building the Water Cycle Model: Gather materials:</p> <ul style="list-style-type: none"> ● Paper plates or cardstock

	<ul style="list-style-type: none"> ● Cotton balls ● Markers ● Glue and scissors ● Arrows and labels ● Make an example model ahead of time ● Organize materials for easy access ● Prepare simple step-by-step instructions ● Keep word bank visible for students ● Plan partner sharing time
Lesson 7	<p>Caring for Water (Conservation & Indigenous Perspectives):</p> <ul style="list-style-type: none"> ● Prepare simple discussion about respecting water ● Gather picture cards showing good and bad water use ● Prepare sorting activity (good for water / not good for water) ● Examples: turning off tap, wasting water ● Prepare chart paper for brainstorming ● Gather materials for posters (paper, markers) ● Plan a few guiding questions about water use at home ● Plan sharing time for discussion
Lesson 8	<p>Caring for the Water (Indigenous Connection):</p> <ul style="list-style-type: none"> - Prepare an Indigenous story about water (book, video, or oral teaching) - Preview story and plan a few simple stopping points for discussion <p>Prepare guiding questions about:</p> <ul style="list-style-type: none"> ● why water is important ● how we use water ● how we can care for water <p>Gather materials for “Water Promise” activity:</p> <ul style="list-style-type: none"> ● Large water droplet template or paper ● Markers/crayons ● Prepare chart paper for class brainstorming (ways to care for water) ● Ensure respectful language and tone when discussing Indigenous perspectives (water as living/sacred) ● Optional: prepare a simple connection back to the full water cycle (how caring for water affects the whole cycle) ● Plan sharing circle or partner sharing time

Cross-Curricular Connections:

This unit connects to multiple subject areas to support well-rounded learning. In **Language Arts**, students practice speaking, listening, and writing by sharing ideas; describing observations; labeling diagrams; and listening to stories about water.

In **Math**, students use basic measurement and comparison skills when observing changes in water during experiments.

In **Art**, students create drawings and models of the water cycle to show their understanding.

In **Physical Health and Education**, movement-based activities like acting out the water cycle help support kinesthetic learning.

This unit also connects to **Social Studies** and **Indigenous Education** by encouraging respect for water and understanding its importance in the environment and in Indigenous ways of knowing.

Aboriginal Connections/ First Peoples Principles of Learning:

Water is viewed as something living and sacred in many Indigenous teachings. This unit encourages students to learn about water respectfully and understand our responsibility to care for it.

FPPoL:

“Learning is holistic, reflexive, reflective, experiential, and relational (focused on connectedness, on reciprocal relationships, and a sense of place.”

- This FPPoL fits into this unit because students are learning about water through a variety of connected experiences rather than just being presented with the information. Hands-on, student-centred activities, experiments, stories, and discussions promotes a place-based, experiential and relational approach to teaching the water cycle.

“Learning involves the consequences of one's actions.”

- This FPPoL fits into this unit as students are introduced to Indigenous connections to water, as well as our individual/community responsibilities to maintain clean water. Our individual actions are shown through wasting water or polluting the water, and we must keep it clean so we have clean water for future generations. This is especially touched on in the last lesson (lesson 8) through reading an Indigenous book about the importance of clean water, then to do an activity/project on keeping water clean. Mentions of water treatment facilities and pipeline/oil spills can be brought up as well to show community responsibility.

Universal Design for Learning (UDL)

This unit incorporates many principles of UDL by providing multiple ways for students to view content, engage with learning, and demonstrate their understanding. Throughout the lessons, information is presented using a variety of formats, including read-aloud stories, visual diagrams, hands-on experiments, and movement-based activities. Students are also given ample opportunities to showcase their learning and understanding of the water cycle in different ways. Some ways students can express their learning is by drawing, oral discussions (partner & class), participating in movement activities, and completing simple written responses. This allows students to display their learning through different strengths, language abilities, and comfort levels; giving everyone a fair opportunity. Student engagement and schema is present and activated through hooks/introductions that they can relate to, this can create and maintain interest and motivation for the topic. Overall, this unit is designed to be flexible and inclusive to reduce some learning barriers for everyone, so meaningful connection and learning is present.

Differentiated Instructions (DI)

This unit uses differentiated instruction by adjusting content, process, and product to meet the diverse needs of learners. The content is designed to be scaffolded through each lesson, where each lesson builds off of students' prior knowledge and experiences, then gradually introducing more complex concepts. Vocabulary is introduced slowly and kept on a word wall or word bank, then revisited each lesson. Through many teaching strategies like hands-on experiments, discussions, movement activities, and visual support, DI is supported. Lesson activities can be adapted for specific individuals and without changing the learning expectations through things such as: partner/group work, providing translation tools for ELL students, drawing or explaining orally instead of writing, etc. Overall, this unit provides students with multiple entry points, supports, and opportunities for learning progression.

Overview of Lessons:

Lesson 1

Name & Time (Minutes Allotted):	Water Cycle Intro & Vocabulary
Learning Standards: Curricular Competencies	<ul style="list-style-type: none"> ● Demonstrate curiosity and a sense of wonder about the world ● Ask questions about familiar objects and events ● Communicate observations and ideas using simple language, drawings, and/or oral language
Learning Standards: Content	<ul style="list-style-type: none"> ● Water sources including local watersheds ● The water cycle (basic)
Instructional Objectives	<p>SWBAT:</p> <ul style="list-style-type: none"> ● Share prior knowledge about water in their environment ● Describe what they think happens to water in puddles ● Recognize that water moves in a cycle ● Become familiar with key vocabulary (exposure only)
Assessment:	<ul style="list-style-type: none"> ● Diagnostic/assessment FOR learning: <ul style="list-style-type: none"> ○ Student puddle drawings/writings ○ Class discussion responses ● Formative: <ul style="list-style-type: none"> ○ Turn-and-talk participation ○ Responses during read aloud ○ Exit ticket
Teaching Strategies:	<ul style="list-style-type: none"> ● Inquiry-based learning (puddle mystery) ● Think-pair-share ● Read-aloud with guided questions ● Visual support (water cycle used as a story map)
Materials:	<ul style="list-style-type: none"> ● The Great Big Water Cycle Adventure by Kay Banham (book or read aloud video) search ● Water cycle diagram/poster ● Whiteboard ● Drawing paper and pencils ● Exit ticket/journal
Lesson Activities:	
Introduction/Hook:	<p>"Today we are going to learn about water, where it comes from and where it goes."</p> <p>Hook: "Who here has ever seen a big puddle outside after it rains?" (even better if there are puddles outside)</p>

	<ul style="list-style-type: none"> - Students discuss and/or share <p>“What happens to the puddle later in the day or the next day?”</p> <ul style="list-style-type: none"> - Students share <p>“That’s right, sometimes when I go back outside, the puddle is gone or smaller. Where did it go?”</p> <ul style="list-style-type: none"> - Students write or draw what they think happens to the puddle and teacher collects them for a diagnostic assessment <p>“Today we are going to be water detectives to find out where water really goes and where it comes from!”</p>
<p>Body:</p>	<p>“Now let’s read a story together that might help us solve our puddle mystery”</p> <p>Read aloud or play a video of “The Great Big Water Cycle Adventure” by Kay Banham. (6:14) search</p> <p>Have a diagram or drawing of the water cycle visible at the front of the class to reference during the story (use like a story map)</p> <p>Pause and ask during the story:</p> <ul style="list-style-type: none"> - What is happening to the water here? - Where is the water going? - Have you seen anything like this before? <p>Introduce the term ‘cycle’:</p> <p>“A cycle is something that happens again and again”</p> <ul style="list-style-type: none"> - Metamorphosis life cycles(butterfly,frog,plant,chicken) - Seasons - day/night - Bicycle! <p>“Cycles also happen with water!”</p> <p>Introduce Vocabulary: Word list on smart board</p> <p>Write the words on the board, not for memorization, just to show:</p> <ul style="list-style-type: none"> - Evaporation - Condensation - Precipitation - Run-off - Collection <p>“We will learn what these important science words mean within the next few lessons!”</p>
<p>Closure:</p>	<p>“Do you think your idea about the puddle changed after the story?”</p> <ul style="list-style-type: none"> - Students share with a partner <p>Exit ticket: journal activity & picture: (have some examples listed of where water is present and choose one to draw!</p>

	<ul style="list-style-type: none"> - Write and draw one place where you see water in your life <p>"Today we started thinking about what happens to puddles. Over the next few lessons, we will find out how water really moves around the Earth"</p>
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Lesson 2

Name & Time (Minutes Allotted):	States of Water & The Sun's Role
Learning Standards: Curricular Competencies	<ul style="list-style-type: none"> ● Observe and describe properties of familiar materials ● Make predictions about familiar events ● Communicate observations using drawings and simple language
Learning Standards: Content	<ul style="list-style-type: none"> ● The water cycle is driven by the sun ● The water cycle is a major component of weather (rain, snow, hail; states of water)
Instructional Objectives	<p>SWBAT:</p> <ul style="list-style-type: none"> ● Identify water as a solid, liquid, and gas ● Explain that water can change form ● Begin to recognize that the heat (sun) causes change
Assessment:	<p>Triangulated:</p> <ul style="list-style-type: none"> ● Conversation: <ul style="list-style-type: none"> ○ turn-and-talk discussions about puddle ○ Students explanations during class discussion (states of water) ● Observation: <ul style="list-style-type: none"> ○ Participation in identifying solid, liquid, gas ○ Engagement during the plastic bag activity ○ Ability to notice changes and respond to prompts ● Product: <ul style="list-style-type: none"> ○ Student drawing of water as a solid, liquid, gas ○ Or: what happened to the puddle <ul style="list-style-type: none"> ■ Optional labeling/explanation
Teaching Strategies:	<ul style="list-style-type: none"> ● Hands-on exploration (states of water) ● Visual modeling (real objects and bag model) ● Think-pair-share ● Experiential learning (ongoing observation)
Materials:	<ul style="list-style-type: none"> ● Ice ● Water ● Clear container ● Ziplock bag/tape ● Markers ● Window with sunlight ● journal/drawing sheet
Lesson Activities:	
Introduction/Hook:	<p>Shows an ice cube and a cup of water:</p> <p>"What do we call these different forms of water?"</p> <ul style="list-style-type: none"> - Turn and talk <p>"Yes, ice is the solid form of water and the water is the liquid form"</p> <p>"Do you remember the other form of water that we can't always see?"</p>

	<ul style="list-style-type: none"> - Share ideas <p>"Yes, water vapor is the gas form of water!"</p> <p>"So, what would happen if I were to leave the ice cube out?"</p> <ul style="list-style-type: none"> - "That's right it will melt!" <p>Ask: "does anyone know what is causing the ice to melt?"</p> <ul style="list-style-type: none"> - Students share ideas <p>"What gives things heat outside?"</p> <p>"Yes the sun causes things to heat up, including water!!"</p> <p>(if there were puddles)"Yesterday we talked about puddles disappearing. Do you think the water is gone , or did it change into something else?"</p> <p>"What do you think happened?"</p> <ul style="list-style-type: none"> - students turn and talk and share ideas <p>"Today we are going to explore how water changes form and how the sun helps move water through the environment."</p>
<p>Body:</p>	<p>States of water exploration (keep brief):</p> <p>"Water can exist in 3 forms: solid, liquid, and gas"</p> <p>"Water doesn't disappear, it changes forms."</p> <p>Put an ice cube in the sun and one in the shade. (or one with extra heat and one without)</p> <ul style="list-style-type: none"> - "Which one do you think will melt faster?" <p>Students observe and write down</p> <ul style="list-style-type: none"> - "What do you notice is happening to the ice?" - What is it turning into? (solid to liquid) <p>"The ice in the sun is melting faster because it's getting more heat."</p> <p>(check next day to see evaporation occurred)</p> <p>Mini water cycle in a bag experiment:</p> <p>As a class OR individual:</p> <ul style="list-style-type: none"> - Put water or ice in a ziplock bag and tape it to the window facing the sun <p>"As the sun heats up the water in the bag you will notice some changes, but it may take awhile so we will keep checking on it."</p> <p>Once changes occur ask students:</p> <ul style="list-style-type: none"> - What do you notice in the bag? - Where is the water? <p>Keep the bag on the window while learning each definition and label it properly with science vocabulary for an extra visual.</p>

Closure:	<p>“So if the sun can melt ice...what might it be doing to puddles?” “The puddle didn't disappear, the sun changed it into something else, a vapour (gas)”</p> <p>Students:</p> <ul style="list-style-type: none"> - Draw water as a solid, liquid, and gas <p>OR</p> <ul style="list-style-type: none"> - Draw what they think happened to the puddle <p>THEN:</p> <ul style="list-style-type: none"> - Explain their reasoning to a partner.
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Lesson 3

Name & Time (Minutes Allotted):	Evaporation (water moving through the air)
Learning Standards: Curricular Competencies	<ul style="list-style-type: none"> ● Make predictions based on prior knowledge ● Observe changes over time ● Communicate observations using drawings and simple explanations
Learning Standards: Content	<ul style="list-style-type: none"> ● The water cycle is driven by the sun (heat) causing water to turn into a vapour (gas) and rise into the air
Instructional Objectives	<p>SWBAT:</p> <ul style="list-style-type: none"> ● Explain evaporation in simple terms ● Identify that heat from the sun causes water to change into a vapour (gas) ● Make and record predictions about evaporation ● Connect evaporation to real-life experiences (puddles, cooking, hot showers)
Assessment:	<p>Triangulated:</p> <ul style="list-style-type: none"> ● Conversation: <ul style="list-style-type: none"> ○ Turn-and-talk about vapour and evaporation ○ Student conversation during centres ● Observation: <ul style="list-style-type: none"> ○ Participation in movement activity ○ Engagement during centres ● Product: <ul style="list-style-type: none"> ○ prediction/observation worksheet ○ Drawing of puddle with arrows showing evaporation ○ Simple written or oral explanation
Teaching Strategies:	<ul style="list-style-type: none"> ● Inquiry-based questioning ● Use of word bank/word wall (vocabulary connection) ● Kinesthetic learning (movement activity) ● Hands-on experiment
Materials:	<ul style="list-style-type: none"> ● Word bank/word wall on board or chart paper ● Paper towels/trays ● Water ● Sunny window ● Spray bottle ● paper/pencils/crayons ● wordbank/ fill in the blank sheet ● timer
Lesson Activities:	
Introduction/Hook:	<p>Have a wordbank placed at the front of the class with:</p> <ul style="list-style-type: none"> - Evaporation, condensation, precipitation, run-off, collection

	<p>Point to the word evaporation and say:</p> <ul style="list-style-type: none"> - "Let's look at this word: evaporation" - "Do you notice the word 'vapor' inside of it?" <p>Ask:</p> <ul style="list-style-type: none"> - "If you remember what vapor is from our last lesson, put your thumbs up, if you don't remember that is okay." <p>Students turn-and-talk and share if some remember.</p> <p>"So, some scientists say that the water in puddles doesn't just disappear. The sun turns it into water vapor which is the gas form of water and rises into the air."</p> <p>"This process is called evaporation and that is what we are going to learn about today."</p> <p>"Let's look at the ice cube from yesterday... It's all gone now! The sun heated it up and turned it into a liquid, now a gas, it evaporated!"</p> <p>Model and instruct:</p> <p>"We are going to pretend to be evaporating with our bodies! Everyone stand up, crouch down with your arms down, then when I say 'evaporate', everyone will slowly stand and raise their arms upwards through the air like vapor."</p>
<p>Body:</p>	<p>Evaporation Centres (3 stations, 5 per group):</p> <p>Centre 1: evaporation on skin (heat focus)-</p> <ul style="list-style-type: none"> - Spray a little water on hands - Blow on hands or shake them until they are dry <p>"Where did the water go? It turned into vapour from the heat of our breath and the heat of the room"</p> <p>Centre 2: wet paper test (sun/heat focus)-</p> <ul style="list-style-type: none"> - Wet 2 small, thin paper towels - Place one in the sun or in heat; one in the shade - "Which one will dry faster, remember our ice cube test! Why?" <p>Centre 3: Draw and explain evaporation! (assessment piece)-</p> <ul style="list-style-type: none"> - Students draw a: <ul style="list-style-type: none"> - Puddle - Sun - And arrows going up to represent the water rising - Have a word bank and/or fill in the blank for their explanation sentences <p>Students can make predictions and record observations on a simple worksheet.</p> <p>"When water is heated by the sun and turns into a vapor or gas, it is called evaporation."</p> <p>Make connections to:</p> <ul style="list-style-type: none"> - Wet clothes drying - Sidewalk drying

	- Puddles drying
Closure:	<p>After the centres are done, have a debrief discussion about what we experienced.</p> <p>“At every centre, where did the water go?”</p> <p>“Evaporation is when water turns into a gas (vapour) and rises into the air because of heat; it doesn't just disappear, even if it looks like it.”</p>

Lesson 4

Name & Time (Minutes Allotted):	Condensation (Cloud Formation)
Learning Standards: Curricular Competencies	<ul style="list-style-type: none"> ● Make observations about changes in materials ● Ask questions and share ideas ● Represent ideas through movement, drawings, and discussion
Learning Standards: Content	<ul style="list-style-type: none"> ● Water vapour cools and changes back to liquid (condensation) ● Clouds are formed through condensation (the second step of the water cycle)
Instructional Objectives	<p>SWBAT:</p> <ul style="list-style-type: none"> ● Explain condensation ● Describe how clouds are formed ● Observe and record changes during an experiment ● Connect evaporation and condensation
Assessment:	<p>Triangulated:</p> <ul style="list-style-type: none"> ● Conversation: <ul style="list-style-type: none"> ○ Turn-and-talk about where vapour goes ○ Class discussion during and after the story ○ Student explanations of condensation ● Observation: <ul style="list-style-type: none"> ○ Participation in condensation experiment ○ Engagement in cloud-building activity ○ Ability to connect evaporation to condensation ● Product: <ul style="list-style-type: none"> ○ Observation recording (experiment) ○ Drawing: puddle-evaporation-cloud ○ Written/oral prediction of “what happens next”
Teaching Strategies:	<ul style="list-style-type: none"> ● Read-aloud (story-based learning) ● Hands-on demonstration ● Guided questions ● Kinesthetic learning (movement) ● Visual and experiential connections
Materials:	<ul style="list-style-type: none"> ● <i>How Cloud Became a Cloud</i> (book or read-aloud video) search (6:33) ● Clear cup ● Warm water ● Plate or lid ● Ice cubes ● Paper towels ● Observation sheet ● Word bank/word wall ● Plastic bag model from lesson 2

Lesson Activities:	
Introduction/Hook:	<p>"Yesterday we learned that water from puddles can go up in the air, and that it is called what?"</p> <ul style="list-style-type: none"> - Students answer "evaporation" <p>"Do we remember what it looks like when we pretend we are evaporating?"</p> <ul style="list-style-type: none"> - Students demonstrate evaporation. <p>"Now where do you think the vapour goes once it is in the air?"</p> <ul style="list-style-type: none"> - Students turn and talk and share <p>"Why do you think clouds form in the sky?"</p> <ul style="list-style-type: none"> - Discuss
Body:	<p>Now we are going to listen to a story about how clouds are formed, which is part of the next step of the water cycle"</p> <p>Read or listen to "When Cloud Became a Cloud"</p> <p>Condensation Demonstration or activity:</p> <ul style="list-style-type: none"> - Fill cup with warm water (creates vapor) - Place a plate on top of cup with ice cubes (cools the vapor) - Make class estimations - Observe what happens (droplets forming on inside walls, water collecting and running down) <ul style="list-style-type: none"> - Have students record observations on a guided sheet <p>"The book showed us how clouds can form when water vapour rises into the sky (evaporates), then cools down and turns back into a liquid in the air. This experiment shows us that, but on a much smaller scale"</p> <p>This process is called "condensation" (point to the word bank) and it's what creates clouds!</p>
Closure:	<p>"Since we pretended to be evaporating with our bodies, now let's pretend to be condensation. When I say 'Condensation' I want you to find two or three others to form a 'cloud' "</p> <p>"Then we will put our evaporation and condensation movements together"(heat up, cool down; rise, condense)</p> <p>"So first water evaporates (goes up), then it condenses (forms clouds)"</p> <p>"Once there is too much condensation in a cloud, it starts to get darker and heavier until it can't hold it anymore. That's when our next step of the water cycle occurs which we will discuss in the next lesson."</p> <ul style="list-style-type: none"> - "Write down or draw what you think will happen next in your journals" (predicting)

Lesson 5

Name & Time (Minutes Allotted):	Precipitation (rain, snow, hail)- Cloud in a Jar and/or Cloud Search?
Learning Standards: Curricular Competencies	<ul style="list-style-type: none"> ● Make observations about changes in familiar materials ● Ask questions and share ideas about observed events ● Communicate observations using drawings and simple explanations
Learning Standards: Content	<ul style="list-style-type: none"> ● Precipitation as part of the water cycle ● Water changes form and falls back to Earth (rain, snow, hail)
Instructional Objectives	Students will be able to: <ul style="list-style-type: none"> - Explain precipitation in simple terms - Identify different types of precipitation (rain, snow, hail) - Model rainfall using an experiment
Assessment:	<p>Triangulated:</p> <p>Conversation: Turn-and-talk about what happens when clouds get too full Class discussion during experiment</p> <p>Observation: Participation in cloud search and experiment Engagement and ability to describe what is happening</p> <p>Product: Drawing of cloud in a jar experiment Simple explanation (oral or written) of precipitation</p>
Teaching Strategies:	Hands-on experiment Inquiry-based questioning Outdoor observation (cloud search) Visual learning
Materials:	<ul style="list-style-type: none"> - Clear jar - Water - Shaving cream - Food coloring - droppers
Lesson Activities:	
Introduction/Hook:	<p>https://www.youtube.com/watch?v=UcJwoDPK2p0&t=28s 2:52-</p> <ul style="list-style-type: none"> - Stop at chapter 6, page 2 (take predictions) <p>“pull out your journals and take a look at your prediction from last lesson, what happens when a cloud has a lot of condensation? (it starts to rain/precipitate)” (5mins)</p> <p>“Since we pretended we were ‘evaporation’ and ‘condensation’ with our bodies our last few lessons, now let’s pretend we are precipitation and do all the movements together.” (5mins)</p>
Body:	

	<p>Activity #1- (20 mins)</p> <p>Cloud in a jar experiment: (split class in 3 groups)(each group with 1 educator)</p> <p>Steps:</p> <ol style="list-style-type: none"> 1. Fill jar with water 2. Spray shaving cream on top (cloud) 3. Drop food coloring onto cloud <p>Teacher will:</p> <ul style="list-style-type: none"> - Demonstrate experiment - Guide predictions - Guide discussion <p>Students will:</p> <ul style="list-style-type: none"> - Observe carefully - Describe what they see - Record their answers (draw what they saw) - Write in journals "When clouds have too much condensation, the next step of the water cycle begins. This is called precipitation. Precipitation means rain, snow, or hail." <p>Activity #2- (15 mins)</p> <p>Cloud Search:</p> <ul style="list-style-type: none"> - Outside, using 'binoculars' students find a cloud with the most 'condensation' (darkest, biggest) and record their observations. <p>Students will:</p> <ul style="list-style-type: none"> - Identify which clouds have the most condensation and will precipitate the most - Draw their chosen cloud
<p>Closure: (10 mins)</p>	<ul style="list-style-type: none"> ● Once students finish recording their observations, they will decorate their cardboard binoculars with stickers outside while the teacher prompts discussion about their observations. <p>Teacher will:</p> <ul style="list-style-type: none"> - Lay out blankets to invite students to stay seated in the area - Place a mini "garbage" bin for students to put their sticker backs in - Teacher will then prompt discussion about cloud observations while students decorate their binoculars with stickers and answer guided prompts <p>Students will:</p>

	<ul style="list-style-type: none"> - Share observations - Participate in group discussion - Be mindful of where their sticker backs go and place it in the proper bin
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Lesson 6

Name & Time (Minutes Allotted):	Where Water Goes (run-off, collection, and movement)
Learning Standards: Curricular Competencies	<ul style="list-style-type: none"> ● Observe and describe changes in the environment ● Ask questions and make connections to real life ● Communicate ideas through drawings and discussion
Learning Standards: Content	<ul style="list-style-type: none"> ● Water moves across land (run-off) and collects in bodies of water ● Water sources (lakes, rivers, oceans, groundwater)
Instructional Objectives	<p>Students will be able to:</p> <ul style="list-style-type: none"> - Explain run-off and collection - Describe where water goes after precipitation - Connect water movement to real-life environments
Assessment:	<p>Discussion about where rain goes Turn-and-talk connections</p> <p>Observation: Participation in demonstration Ability to follow water movement</p> <p>Product: Drawing showing water moving to a lake/ocean Optional labeling (run-off, collection)</p>
Teaching Strategies:	<ul style="list-style-type: none"> ● Demonstration (mini landscape model) ● Inquiry-based questioning ● Visual learning ● Real-life connections
Materials:	<ul style="list-style-type: none"> ● Tray or bin ● Sand/soil ● Water ● Small rocks ● Cup for pouring water
Lesson Activities:	
Introduction/Hook:	<p>Ask:</p> <p>“Yesterday we made rain... but we forgot something really important. Once the rain hits the ground... where does it go?!”</p> <p>Then say:</p> <p>“Today you are going to become water droplets and travel across the land!”</p>

https://youtu.be/bf6p_45TmiE?si=fDKk9TXqZMZYhHVJ

Body:

Activity 1: Water Cycle Movement Game (5–10 min)

Teacher Duties

- Call out instructions
- Model movement

Student Duties

- Act as water

How it works:

- Students crouch = rain hitting the ground
- Teacher says “RUN-OFF!” → students move/flow across the room
- Teacher says “COLLECTION!” → students gather in groups (lakes/oceans)

Activity 2: “Build Your Own Landscape”

Materials:

- Tray/bin
- Sand or soil
- Small rocks
- Cup of water
- Spoon (optional)

Students will:

- Add sand/soil and small rocks to a tray
- Build landscape
- Recreate hills, rivers, flat land
- Pour water at the top
- Observe movement
- Talk with group

Teacher will

- Ask:
“What do you notice?”
“Where is the water going?”
- Prompt: “You are going to make it rain on your land and watch where the water goes!”

	<ul style="list-style-type: none"> - Explain: "When water moves across land, it is called run-off." "When water collects in lakes, rivers, or oceans, it is called collection." - Extensions : Say: - "Can you change your land to make MORE run-off?" OR "Can you make a place where water collects faster?"
Closure:	Students draw and label the path of water (rain → run-off → collection). Quick discussion: "Where does water go after it rains?" Connect back to the full water cycle and add run-off/collection to class model.

Lesson 7

Name & Time (Minutes Allotted):	Water Cycle Representation (Diagram)
Learning Standards: Curricular Competencies	<ul style="list-style-type: none"> ● Communicate ideas using drawings and models ● Represent observations and understanding ● Reflect on learning
Learning Standards: Content	<ul style="list-style-type: none"> ● The full water cycle (evaporation, condensation, precipitation, run-off, collection) ●
Instructional Objectives	<p>Students will:</p> <ul style="list-style-type: none"> - Construct a water cycle model - Identify each stage - Explain the cycle in their own words
Assessment:	<p>Conversation: Students explain model to partner</p> <p>Observation: Ability to correctly place stages Participation in building model</p> <p>Product: Completed water cycle model (labeled)</p>
Teaching Strategies:	<ul style="list-style-type: none"> ● Hands-on learning ● Visual modeling ● Peer explanation ● Scaffolded support (word bank)
Materials:	<ul style="list-style-type: none"> ● Paper plates ● Cotton balls ● Blue paper ● Arrows ● Markers
Lesson Activities:	

Introduction/Hook:	<p>“Do you think you could teach someone else about the water cycle now?”</p> <p>“We are going to build our own water cycle today!”</p> <p>https://youtu.be/ncORPosDrij?feature=shared</p> <p>or</p> <p>https://youtu.be/MWKrWZ_XiS0?feature=shared</p>
Body:	<p>Teacher models example</p> <p>Students build model: Cotton balls = clouds Blue paper = water Arrows = movement</p> <p>Label: Evaporation Condensation Precipitation Run-off / Collection</p> <p>Students explain model to a partner</p> <p>Teacher:</p> <ul style="list-style-type: none"> ● Demonstrates steps/ show example ● Help label stages ● Word bank <p>Students:</p> <ul style="list-style-type: none"> ● Build model ● Label evaporation, condensation, precipitation and run-off ● Explain their model to a partner
Closure:	<p>“Turn to your partner and teach them the water cycle using your model.”</p> <p>Optional: quick share-out</p>

Lesson 8

Name & Time (Minutes Allotted):	Caring for the Water - Indigenous connection
Learning Standards: Curricular Competencies	<ul style="list-style-type: none"> ● Consider environmental impacts of actions ● Express personal connections to place ● Communicate ideas respectfully

Learning Standards: Content	<ul style="list-style-type: none"> ● Water conservation ● First Peoples knowledge of water
Instructional Objectives	<p>SWBAT:</p> <ul style="list-style-type: none"> ● Understand why water is important ● Identify ways to conserve and keep water clean ● Recognize water as something to respect and care for
Assessment:	<p>Conversation: Class discussion about water importance</p> <p>Observation: Participation in discussion and reflection</p> <p>Product: Water promise (drawing or writing)</p>
Teaching Strategies:	<ul style="list-style-type: none"> ● Story-based learning ● Discussion ● Reflection activity ● Connection to Indigenous perspectives
Materials:	<ul style="list-style-type: none"> ● Indigenous story about water (teacher choice) ● Large water droplet template OR paper ● Markers
Lesson Activities:	
Introduction/Hook:	<p>Ask: "What would happen if we didn't have clean water?"</p> <p>"How do you use water every day?"</p>
Body:	<p>Read an Indigenous story about water (or share teaching):</p> <p>https://www.youtube.com/watch?v=jqWTouyaQ-8</p> <p>https://www.youtube.com/watch?v=rI0YiZjTqpW</p> <p>https://www.youtube.com/watch?v=Ljgrb8nQovs</p> <p>https://www.youtube.com/watch?v=gwQ7PSrwGul</p> <p>Explain: "In many Indigenous cultures, water is seen as something living and sacred. It is something we must respect and take care of."</p> <p>Discuss: "How can we take care of water?"</p> <p>List ideas: Turning off taps</p>

	<p>Not wasting water Keeping water clean</p> <p>Activity: Students create a “Water Promise”</p> <p>Each student writes or draws one way they will care for water</p> <p>Combine into class display</p>
<p>Closure:</p>	<p>“Water is something we all share. When we take care of water, we take care of each other and the Earth.”</p> <p>Teacher Duties:</p> <ul style="list-style-type: none"> ● Guide whole-class reflection ● Ask connecting questions about the full water cycle ● Reinforce key idea (water is important and needs care) ● Invite a few students to share their “Water Promise” <p>Student Duties:</p> <ul style="list-style-type: none"> ● Participate in discussion ● Share one thing they learned about the water cycle ● Share their “Water Promise” (optional or partner share)

Resources:

- BC Hydro Water Cycle image/ possible activity: [the-water-cycle](#)
- [Search](#) - “The Great Big Water Cycle Adventure” book
- [Search](#) “When Cloud Became a Cloud” book

Extensions to Unit:

- Science Extensions:**
- Water cycle in a bottle (closed system)
 - Builds off of the plastic bag model, but more long-term and hands-on
 - Transpiration with plants
 - Plastic bag over the plant leaves and watch water collect inside (evaporation and plants connection)
 - Building a watershed model: [build-a-watershed](#)
- Social Studies/ Environment Extensions:**
- Oil spill simulation in water (try to clean it up)
 - Water conservation project:
 - Track water usage at school/home and create posters about saving water
 - Class promises list for keeping water clean
 - On a big drawing of a water droplet each student adds something they promise to do to help keep water clean OR to help preserve water
 - The book: “Sometimes I Feel Like a River” by Danielle Daniel, can be used to show the interconnectedness of water and nature to us. Also has a strong emphasis on SEL.

Reflections and Revisions

This water cycle unit was carefully planned to scaffold student learning step by step without becoming too repetitive. Each lesson is built on the previous one while focusing on different concepts of the water cycle. There were some challenges along the way, as we wanted to reinforce key ideas such as water changing form and moving through the environment while still keeping each lesson engaging and varied. To support this, we used different approaches such as inquiry, experiments, movement, and visual learning.

A strong focus of this unit was hands-on and experiential learning. Students are to participate in activities such as evaporation, condensation, and precipitation experiments, movement-based learning where they act out different parts of the water cycle, and discussions connected to real life experiences. These strategies are made to help maintain participation and to support different learning styles.

Indigenous perspectives were also included to deepen students' understanding of water beyond science. Through story, land-based learning, and discussion, students are encouraged to explore the idea that water can be sacred and living. This encourages respect for water as a life-giving resource and helps students to think about their responsibility in caring for it.

Overall, this unit combines scientific learning with environmental awareness. Students are encouraged to understand water as an interconnected system (which supports indigenous ways of knowing) and to begin developing a sense of responsibility for caring for our waterways everyday.