

Grade 2 -General Resources

Across all units

Pre-assessment	Assessment	Getting There	
		Classroom Routines	Resources
<p>Number sense diagnostic assessments These will be done twice a year: at the start of the year and at the end of the year.</p> <p>Computation Assessments These will be done three times a year: start of year, mid-year, and end of year. These demonstrate students' understanding of operations and inform future teaching.</p> <p>Little Books The Little Book resources associated with each unit provide a wealth of material to introduce topics and inform you of students pre-existing knowledge.</p>	<p>Formative Mathology: Each "Activity" lesson has an associated formative assessment.</p> <p>Summative Mathology: "Consolidation" lessons have assessments that guide relevant observations of students' work. These assessments can be done through either an individual interview, or by observing how students solve problems in pairs.</p>	<p>Effective Practices</p> <ul style="list-style-type: none"> -Integrate hands on activities -Use centers around the room with different activities -Use lots of visuals -Accept variations on how students communicate -Set goals for students -Use of creative exit tickets -Whole class number talks <p>-In Mathology there are "Intervention" tasks that help to support the basic concepts of each cluster of activities</p> <p>Basic Facts Practice</p> <p>-The resource "Gr. 1 and 2 High Yield Routines For Number Sense" provides a wealth of information. This is a large file that describes a variety of routines. It is important that routines are developed and followed for a longer period of time so students become familiar with them.</p>	<p>Mathology</p> <p>-Sample Long-Range Plan: a standard plan is available for each grade. These are easily modified to arrange units to fit with the suggested order of units in the Overview Plan document.</p> <p>-“Little Books” and associated activities provide an accessible way to present math concepts, with a wide variety of supporting activities</p> <p>-“Intervention” lessons are a way of providing additional instruction around a core topic</p> <p>-Pearson Line Masters to support related work in both little books and classroom activities</p> <p>Math Tools</p> <p>-Pearson math tools: this online resource provides lots of opportunities for students to practice and play around with concepts; some specific tools are linked in the relevant unit section.</p> <p>Alternative Resources</p> <ul style="list-style-type: none"> -Manitoba Activities -Saskatchewan curriculum & assessments -Indigenous Education Numeracy (SD71) -Indigenous Math Network (UBC)

Grade 2 - Patterns (Unit 1)

Mid-August - Mid-September (About 4 weeks)

Students will predict and generalize patterns and see how they contribute to reasoning necessary for algebra.

Pre-assessment	Assessment	Getting There		Comments
		Classroom Routines	Resources	
Mathology: -Little Book: Pattern Quest Pattern problems (Line Master 11) -Number sense assessment	Formative -Patterning Activities 1-4	Effective Practices -Integrate hands on activities for making patterns such as beading. -Use lots of visuals -Accept variations on how students communicate what patterns are -Math Every Day: Patterning 1 Basic Facts Practice -Mathology: Math Every Day; Repeating patterns around us	Mathology -Repeating Patterns unit -Classroom activity kit, Patterning and Algebra Cluster 1 and 2 -Little Book: Pattern Quest Math Tools Colour Tiles Building Blocks Other Patterns and Parkas	Repeating Patterns need to be revisited throughout the year using high yield routines and Math Talks. Also encourage students to use a variety of attributes such color, position, orientation to introduce vocabulary. Spiraling and Making Connections -Sorting 2-D Shapes and 3-D Objects -Pattern Walk (Indoors and Outdoors): Students sketch and describe patterns they see. <i>Financial Literacy:</i> Making patterns with coins in order to sum to a set value.
	Summative -Repeating Patterns unit lesson 5 assessment			

I Can Statements

Patterns	I can identify and reproduce more complex patterns, e.g., positional and circular patterns.
	I can increase patterns using manipulatives, sounds, actions and whole numbers.
	I can identify the core of repeating patterns.

Grade 2 - Number Sense I (Unit 2) and Place Value (Unit 3)

Mid September – Late November (About 11 weeks)

Students count and subitize in order to quantify collections of objects

Pre-assessment	Assessment	Getting There		Comments
		Classroom Routines	Resources	
<p>Mathology: -Little Books: “What would you rather”, “Ways to count”, “Back to Batoche”, “The Great Dogsled Race”, “A Class Full of Projects”, “Array’s Bakery”, and “Marbles, Alleys, Mibs, and Guli”</p> <p>-Number sense assessment</p>	<p>Formative</p> <ul style="list-style-type: none"> -Counting (Number 1-4) -Number Relationships 1 (Number 6-11) -Grouping and Place Value (Number 13-15) -Operational Fluency (Number 32-35) <p>Summative</p> <ul style="list-style-type: none"> -Counting (Number-5) -Number Relationships 1 (Number-12) -Grouping and Place Value (Number-16) -Operational Fluency (Number-36) 	<p>Effective Practices</p> <ul style="list-style-type: none"> -Establish regular routines for number talks to review what has been covered <p>Basic Facts Practice</p> <ul style="list-style-type: none"> -Mathology: Math Every Day activities 1-3 and 7 	<p>Mathology</p> <ul style="list-style-type: none"> -Units on: Counting, Number relationships, Grouping and Place Value, and Operational Fluency -Classroom activity kit Number Clusters: Counting, Number Relationships 1, Grouping and Place Value <p>Math Tools</p> <ul style="list-style-type: none"> Number Line Model Build a Number Line Hundred Chart 	<p>The number sense and place value unit is a large unit that will spiral through the year.</p> <p>Counting, place value, and mental math strategies for addition and subtraction basic facts should be reviewed at the start of the year through regular classroom routines.</p> <p>Spiraling and Making Connections</p> <p><i>Financial Literacy:</i> Combinations of coins to make 100</p> <p><i>Patterns:</i> Increasing patterns related to skip counting</p>

Number Sense – I Can Statements

Place Value	I can explain tens and ones in a number.
	I can represent a number on a number line, hundred chart, or ten frame.
	I can identify and explain odd and even numbers.
Counting	I can say numbers forwards and backwards to 100.
	I can skip count by 2s, 5s or 10s forwards and backwards.
	I can subitize.
Representing and Writing Whole Numbers	I can read numbers up to 100.
	I can represent numbers up to 100 in many ways.

	I can count objects using groups of 10 and record the number.
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<p>Grade 2 -Geometry (Unit 4) Late November – Late December (About 4 weeks)</p>
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Students create categories of different objects by analyzing and classifying them by their similarities and differences

Pre-assessment	Assessment	Getting There		Comments
		Classroom Routines	Resources	
Mathology: -Little Books: “I Spy Awesome” and “Sharing our Stories” -Number sense assessment	<p style="text-align: center;">Formative</p> -2-D shapes (Geometry-1-3) -3-D solids (Geometry-6-9) -Geom Relations (Geom-11-16)	<p style="text-align: center;">Effective Practices</p> -This is a great unit to get students engaged with their outdoor environment. When possible, get students out into the playground to run activities.	<p style="text-align: center;">Mathology</p> -Units on 2-D Shapes, 3-D Solids, Geometric Relationships	This topic works well with the measurement unit. Hands on learning activities are great ways to engage with students with Geometry. Building or sorting shapes found around the classroom is a great movement activity. Mathology Geometry activity 4 is beyond the scope of the curriculum but can be used as an extension activity.
	<p style="text-align: center;">Summative</p> -2-D shapes (Geometry-5) -3-D solids (Geometry-10) -Geom Relations (Geom-17)		<p style="text-align: center;">Math Tools</p> Geoboard Shapes	

Geometry – I Can Statements	
Geometry	I can measure and record length, height, and width using standard units.
	I can estimate length.
	I can identify 2D shapes as a part of 3D objects.
Perimeter, Area and Volume	I can describe, compare, and construct 2D shapes.
	I can sort 2D shapes using two attributes.
	I can sort 3D objects using two attributes.

Grade 2 - Algebra and Number Sense II (Unit 5a)

Early January – Late February (About 7 weeks)

Students use operations to solve more complex patterns that help to build the foundations of algebra.

Pre-assessment	Assessment	Getting There		Comments
		Classroom Routines	Resources	
Mathology: -Little Books: “Pattern Quest”, “The Best Surprise”, “Back to Batoche”, “Family Fun Day” and “A Class-full of projects” -Number sense assessment	Formative -Increasing/Decreasing patterns (Pattern 6-13) -Number Relationships 2 (Number 22-24)	Effective Practices -Building on number sense from earlier in the year effective daily routines help hugely in cementing these ideas. Running centers around the room are effective to allowing you to cover the variety of math exposed here Basic Facts Practice -Math Every Day: Pattern 2A-B, Number 5A-B	Mathology Units: Increasing/Decreasing Patterns, Number relationships 2 Math Tools Number Line Model Number Line Build Relational Rods	This section ties back to the first number sense unit on place value and number sense that was worked on at the start of the year. This current unit focuses on expanding number concepts to further include combinations of skip counting, more complex patterns, and introductory algebra concepts Spiraling and Making Connections <i>Number Sense 1:</i> Basic number skills <i>Patterns:</i> Repeating of core patterns
	Summative -Increasing/Decreasing patterns (Pattern 14) -Number Relationships 2 (Number 25)			

Number Sense and Algebra – I Can Statements

Algebra	I can describe a change in quantity using ten frames, hundreds charts.
	I can apply the concepts of equality and inequality.
Place Value	I can identify and explain odd and even numbers.
	I can represent a number on a number line, hundred chart, or ten frame.
	I can explain tens and ones in a number.
Patterns	I can identify and reproduce more complex patterns.
	I can increase patterns using manipulatives, sounds, actions and whole numbers.
	I can identify the core of repeating patterns.

Grade 2 - Addition and Subtraction (Unit 5b)

Early January – Late February (Integrated into Number Sense II)

Students use properties of addition and subtraction to solve problems.

Pre-assessment	Assessment	Getting There		Comments
		Classroom Routines	Resources	
Mathology: -Little Books: “The Great Dogsled Race”, “Array’s Bakery”, and “Marbles, Alleys, Mibs, and Guli” -Number sense assessment	Formative -Conceptualizing + and - (Number 26-30)	Effective Practices -As with the Number Sense units, and in addition to general everyday practices, it is very effective to normalize the basic math that you do every day Basic Facts Practice -Math Every Day: Number 6	Mathology -Conceptualizing Addition and Subtraction unit and associated classroom activity kit Math Tools Addition chart	Addition and subtraction are separate from number sense in order to prioritize these operations and ensure that students are exposed to flexible methods of computation. Spiraling and Making Connections <i>Financial Literacy:</i> Adding mixed combinations of coins to 100
	Summative -Conceptualizing + and - (Number 31)			

I Can Statements

Addition and Subtraction	I can add and subtract numbers up to 2 digits.
	I can write an addition or subtraction story and can solve problems.
	I am aware of various math strategies such as looking for multiples of 10
Comparing and Ordering	I can compare and order numbers from smallest to greatest and vice versa.
	I can identify errors or missing numbers in a pattern.
	I can order numbers from 1 to 100 on a number line using benchmarks.

Grade 2 -Measurement (Unit 6)

Late Feb –Late March (About 4 weeks)

Students use measurable attributes to quantify and compare seemingly different objects.

Pre-assessment	Assessment	Getting There		Comments
		Classroom Routines	Resources	
<p>Mathology: -Little Books: “Animal Measures”, “The Discovery” and “Getting Ready for School”</p> <p>-Number sense assessment</p>	<p>Formative -Non-standard units (Measurement 1-6) -Standard units (Measurement 8-11)</p> <p>Summative -Non-standard units (Measurement 7) -Standard units (Measurement 12)</p>	<p>Effective Practices Incorporate measurement talks into your daily routine, or consider making models of the students’ designs that rely on them making measurements of dimensions.</p> <p>Basic Facts Practice -Math Every Day: Measurement 1-2</p> <p>Extension -While beyond curriculum level, Mathology has additional activities on Time and Temperature that can be included</p>	<p>Mathology -Clusters on Non-Standard and then Standard units</p> <p>Math Tools Pearson Math Tools</p> <p>-Research-based measurement activities: How to Teach Measurement in 1st and 2nd Grade</p>	<p>Measurement lends itself very well to practical activities and place-based learning. There are opportunities to develop class units of measurement. This is also a chance to identify common misconceptions around what different units are for. Ensure you are precise with your language.</p> <p>Spiraling and Making Connections <i>Addition and Subtraction</i>: I can add and subtract numbers up to 2 digits</p>

Measurement – I Can Statements

Measurement	I can measure with centimeters and meters.
	I can measure length, height and width

Grade 2 -Equality and Inequality (Unit 7)

Late March – Late April (About 4 weeks)

Students use algebraic tools as efficient ways to represent, generalize, and analyze patterns.

Pre-assessment	Assessment	Getting There		Comments
		Classroom Routines	Resources	
Mathology: -Little Books: “Nutty and Wolfy” and “Kokum’s Bannock” -Number sense assessment	Formative -Equality and Inequality (Patterning 15-19)	Effective Practices -Incorporate non-number examples of how to work with equality and inequality. A seesaw in the playground is a great tool for this, or challenges with balancing in a class. Basic Facts Practice -Math Every Day: Patterning 3A	Mathology -Cluster on Equality and Inequality from the Patterning unit. Math Tools Balance numbers Balance symbols	This topic builds on a very basic understanding of algebra. At this level, it is important that positive language is used around the ability to solve problems with more than just equal signs. Spiraling and Making Connections <i>Patterns:</i> I can identify increasing and decreasing patterns
	Summative -Equality and Inequality (Patterning 20)			

I Can Statements

Algebra	I can apply the concepts of equality and inequality.
	I can describe a change in quantity using ten frames, hundreds charts.

Grade 2 - Data Management and Probability (Unit 8)

Late April – Late May (About 4 weeks)

Students formulate questions, and then are able to collect data and display it effectively.

Pre-assessment	Assessment	Getting There		Comments
		Classroom Routines	Resources	
Mathology: -Little Books: “Graph It!”, “Big Buddy Days”, “Marsh Watch” -Number sense assessment	Formative -Data Management (Data 1-5)	Effective Practices -Graphs showing fun things, possibly from class surveys Basic Facts Practice -Math Every Day: Data 1	Mathology -Units on Data Management and Probability & Chance. The included activities do use several of the write on masters from the back of the activity kit Math Tools Graph Data Create a Graph	Data Management gives students the chance to collect and display data. It is an opportunity to engage students in basic statistical literacy, and to graph data relevant to students’ lives. Class surveys on anything from favorite fruit to the results of challenges will engage students in the data they are graphing. Spiraling and Making Connections <i>Number Sense:</i> Counting and representing numbers.
	Summative -Data Management (Data 6)			

I Can Statements

Data Management	I can collect data.
	I can use one-to-one correspondence.
	I can create a concrete graph.
	I can use a pictorial representation.
Probability	I can compare the likelihood of life events (certain, uncertain, more or less likely).

Grade 2 - Financial Literacy (Unit 9)

Integrated throughout the year

Students begin to use their knowledge of coins more extensively, while learning concepts of saving and spending money.

Pre-assessment	Assessment	Getting There		Comments
		Classroom Routines	Resources	
Mathology: -Little Books: “The Money Jar” -Number sense assessment	Formative -Financial Cluster (Number 43-46)	Effective Practices -Class markets -“Food Truck” type activities Basic Facts Practice -Math Every Day: Number-9	Mathology -The unit on Financial Literacy is a cluster of activities in the Number resources. Math Tools Money Tools	As this unit is integrated through the year it can be addressed in a variety of ways. Basic budgeting ideas are introduced that can be covered in any number of units, or activities throughout the year. Spiraling and Making Connections Financial literacy is intended to be integrated throughout the year. Students will be making connections with financial calculations and the other units that are being covered.
	Summative -Financial Cluster: Number 47			

I Can Statements

Financial Literacy	I can count mixed combinations of coins to 100.
	I can explain the concept of spending, saving, wants and needs.

Sample Weekly Lesson Plan (Blank)

Goal (Intention) for the week:

I Can Statements:

	Lesson 1	Lesson 2	Lesson 3	Lesson 4	Lesson 5
Vocabulary					
Basic Facts					
Computation Review					
Videos					
Word Problems (Place Based)					
Guided Instruction Whole Group					
Guided Instruction Small Group					
Follow-up/Practice					
Assessment					
Comments					

Sample Weekly Lesson Plan (Filled)

Goal (Intention) for the week: Solve more complex word problems

I Can Statements:

- I can record equations symbolically using = and \neq
- I can solve one-step addition and subtraction equations with an unknown number.
- I can perform the order of operations on whole number with brackets (excluding exponents).
- I can solve equations and identify extraneous roots
- I can differentiate definite numbers and indefinite functions

	Lesson 1	Lesson 2	Lesson 3	Lesson 4	Lesson 5
Sample Grade	Grade 1	Grade 3	Grade 7	Grade 11	Grade 12
Vocabulary Review	-Equals and not-equal	-Equations -Subtraction -Addition	-Operations	-Functions -Extraneous roots -	-Differentiate -Function -definite -indefinite
Read Alouds	“Buy 1 -Get 1” little book	“Sports Camp” little book	N/A	Nelson PC11 text page 140	Principia
Counting and Skip Counting During the Day Daily					
Basic Facts 5 -8 minutes					
Subitizing 4 minutes					

Daily					
Estimation Weekly					
Computation Review 5 -8 minutes Daily (2)					
Videos					
Brain Breaks					
Math Talk					
Word Problems (Place Based)					
Guided Instruction Whole Group					
Guided Instruction Small Group					
Follow-up					
Practice					
Assessment					
Comments					