# Learning Pathways: Numeracy and Math Curriculum and Assessment Resources

April 2026

BRITISH COLUMBIA

Ministry of Education and Child Care

# Welcome & Territorial Acknowledgement

# Our team's work: *supporting teachers to*

**Curriculum and Classroom Assessment**

- create learning opportunities that help students develop, practice, or demonstrate content knowledge and the curricular competencies
- emphasize transferable Literacy and Numeracy critical thinking and communication skills
- develop an understanding of what Proficient looks like

**Student Reporting Policy**

- communicate about students' growth towards the learning standards and give descriptive feedback

# BC Learning Pathways

## By teachers for teachers

# BC Learning Pathways

A series of resources that help teachers develop students' literacy and numeracy skills

**K-4 Foundational Learning Progressions**

**K-12 Cross - Curricular Resources**

# Where do I find these resources?

From the home page:
[Curriculum | Building Student Success - B.C. Curriculum]
Select the **Learning Pathways** menu tab to open the drop-down menu



From the **Learning Pathways** drop-down menu, select **K-12 Cross-Curricular resources** or **K-4 Foundational Learning Progressions resources**.

# Learning Pathways support teachers in curriculum implementation and classroom assessment

## Plan

Intentionally plan learning opportunities that support the development of foundational, critical thinking, and communication skills.

## Teach

Develop competencies and content knowledge through learning activities and meaningful classroom assessment.

## Assess

Use proficiency descriptors to give descriptive feedback, moving students along the Proficiency Scale.

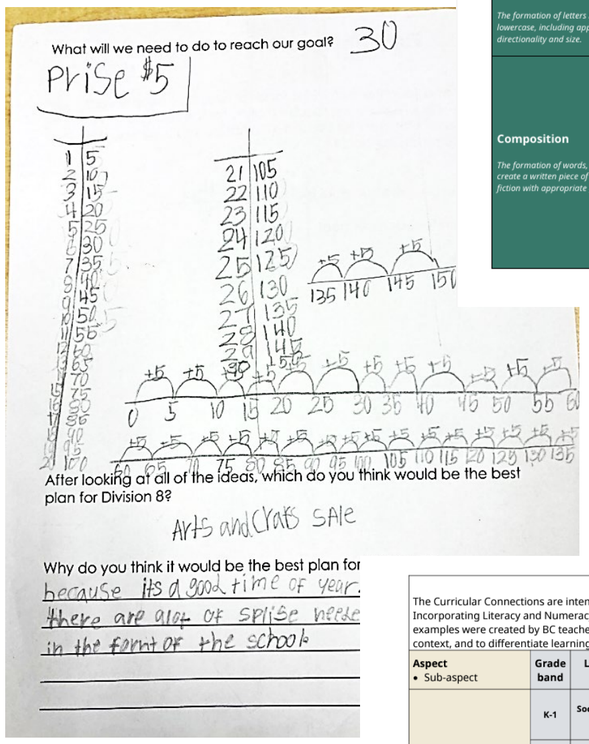
# BC Learning Pathways resources

- **K-12 Cross Curricular Learning Progressions** describe “proficient” in literacy and numeracy. Can be used in all learning areas

- ***NEW* K-4 Foundational Learning Progressions** align directly with Language Arts and Math learning standards and describe “proficient” in reading, writing, oral language and math

- **Curricular Connections** show how to incorporate literacy and numeracy into all learning areas

- **Teaching and Learning Stories** showcase examples of teacher practice and proficient student learning




**Skill: Writing**

Writing allows students to demonstrate their learning and communicate their thoughts in unique and expressive ways. Handwriting instruction should ensure accurate letter formation and spacing. Students should receive regular practice (5-10 minutes/day) to build automaticity which reduces cognitive load and frees up the brain to think about word choice, conventions and sentence formation. Writing instruction should focus on the joy of writing while naturally reinforcing reading and phonics instruction and begin with explicitly teaching sentence, then paragraph construction. Composition of text can take many shapes, including a focus on narrative, persuasive, informational (expository) and opinion genres.

For additional information on **composition** related to developing and communicating ideas and information in a variety of ways, please see the K-5 Literacy Learning Progressions.

| Sub-skill | Proficiency Descriptor *(for the end of the year)* |
|---|---|
| | **Grade 1** |
| **Printing**<br>*The formation of letters by hand, both upper and lowercase, including appropriate spacing, strokes, directionality and size.* | Holds and controls pencil with appropriate grip and pressure<br>Prints lowercase and uppercase letters using appropriate strokes, directionality, and size<br>Uses appropriate spacing between letters and words |
| **Composition**<br>*The formation of words, sentences and paragraphs to create a written piece of text, either fiction or non-fiction with appropriate grammar and mechanics.* | Writes a few sentences (2-3+) to express thoughts and/or ideas with some detail<br>Uses graphemes to represent the words they are trying to write. Able to write initial phonemes and terminal phonemes and most medial phonemes (e.g., “I lik flowrs = I like flowers”)<br>Expands sentences by including more information (e.g., what, where, when, who)<br>Fiction writing follows a taught story framework and may contain some story language<br>Non-fiction writing is conversational, with simple descriptions and repeats simple patterns<br>Uses nouns and verbs correctly and may expand sentences using additional describing words (adjectives)<br>Forms complete sentences with a subject and a predicate (e.g., “The kids are running to the park.”)<br>Constructs compound sentences using conjunctions (e.g., “I like cake, but I love ice cream.”)<br>Uses present and past tense verbs correctly (e.g., “she plays soccer.” and “she played soccer.”) |

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**CURRICULAR CONNECTIONS – LITERACY K-5**

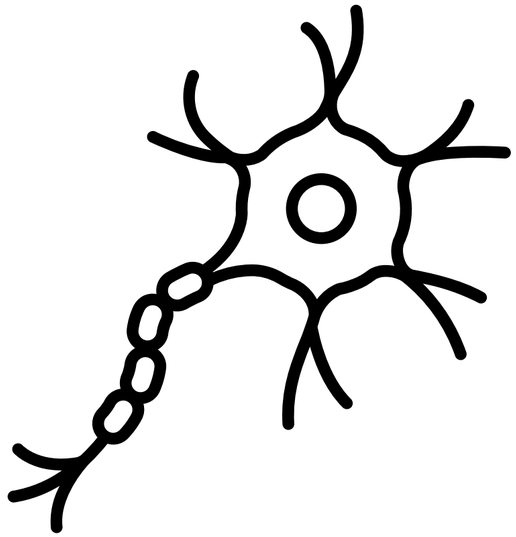
The Curricular Connections are intended to show how aspects of Literacy and Numeracy can be used to support deeper learning in all areas of the BC curriculum. Incorporating Literacy and Numeracy supports students’ development, practice, and demonstration of the learning area curricular competencies. The following examples were created by BC teachers to connect Literacy with the curricular competencies, to inspire personalization to your students’ interests and your local context, and to differentiate learning for the needs of your students. These connections are meant to be illustrative and not exhaustive.

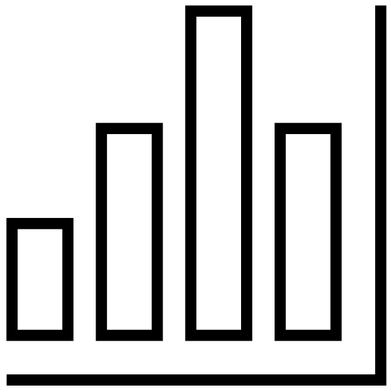
| Aspect<br>• Sub-aspect | Grade band | Learning area | Curricular Competency | Student learning opportunity |
|---|---|---|---|---|
| **Comprehends text**<br>*Makes meaning from text*<br>• Interprets texts<br>• Makes connections<br>• Analyzes texts | K-1 | Social Studies (K/1) | Use Social Studies inquiry processes and skills to ask questions; gather, interpret, and analyze ideas; and communicate findings and decisions | As a whole class, students gather information about the different responsibilities children might have at home and at school. Students might gather information by listening to several texts about responsibilities, including oral stories from older students, and asking questions about and discussing why responsibilities are important. |
| | 2-3 | Career Education (2/3) | Recognize the importance of positive relationships in their lives | The teacher facilitates discussions with students around their connections between home and community. What are positive relationships, and how can students identify one? Students explore the concept of family through books, stories, videos, and other texts. The teacher helps to draw connections between texts and the students’ own lives, and to consider the nature of positive relationships in other contexts. |
| | | Arts Education (3) | Choose elements, processes, materials, movements, technologies, tools, techniques, and environments of the arts | Students learn about and define common elements in the arts from a certain time or place, or representing a key message or interpretation. Students gather books, photographs, and stories from resources, preselected by the teacher, exploring a variety of dance, drama, music, or visual arts. Students present about how the art pieces are connected with their chosen idea, time, or place. |
| | | Science (3) | Identify First Peoples perspectives and knowledge as sources of information | Students listen to and read multiple locally developed texts about the local ecosystem, landscape, or environment. Through small-group discussion, they analyze the texts and make connections with the place or living thing described. |
| | 4-5 | Science (4) | Make predictions based on prior knowledge; transfer and apply learning to new situations | Students imagine that they are travelling to a biome of their choice and need to pack a suitcase to prepare for their journey. They must research the climate of their biome and consider their own needs. They can also consider the efficiency and weight of certain materials. |

# The Learning Progressions describe Proficient literacy, numeracy, and foundational skills by grade level

| The Provincial Proficiency Scale | EMERGING | DEVELOPING | PROFICIENT | EXTENDING |
|---|---|---|---|---|
| | The student demonstrates an initial understanding of the concepts and competencies relevant to the expected learning. | The student demonstrates a partial understanding of the concepts and competencies relevant to the expected learning. | The student demonstrates a complete understanding of the concepts and competencies relevant to the expected learning. | The student demonstrates a sophisticated understanding of the concepts and competencies relevant to the expected learning |

# K-12 Cross-Curricular Learning





**Numeracy** is “the ability to interpret and apply mathematical understanding to solve problems in a variety of contexts and to analyze and communicate these solutions in ways relevant to the given context.”

# LITERACY AND NUMERACY

**Literacy** is “the ability to understand, critically analyze, and create a variety of communication forms, including oral, written, visual, digital, and multimedia. Literate students can make meaning from text and express themselves in a variety of modes; they are able to comprehend, make connections, critically analyze, as well as create texts and communicate for a variety of purposes.”

The K-12 Cross-Curricular Learning Pathways highlight **transferrable literacy and numeracy thinking and communication** skills that are essential to all learning areas of the curriculum.

***Examples:***

- **interpreting** the context behind a problem in Science (creating a research question)
- **connecting** ideas and information in ADST (investigating different models to build a prototype)
- **communicating** ideas and information in PHE (researching and creating a personal plan for healthy living)

# Cross-Curricular Numeracy Learning

| Skill | Sub-skill |
|---|---|
| Interprets | • Understands the real-world problem<br>• Extracts relevant information<br>• Identifies parameters and limitations |
| Applies | • Translates the scenario into a mathematical problem<br>• Represents the mathematical problem<br>• Develops a plan of approach |
| Solves | • Estimates reasonably in context<br>• Solves the mathematical problem<br>• Verifies accuracy of the mathematical problem |
| Analyzes | • Reflects on the reasonableness of the solution in context<br>• Evaluates alternative approaches<br>• Revises approach as needed |
| Communicates | • Defends decisions and assumptions<br>• Explains the approach taken<br>• Represents processes and solution |

# Literacy and Numeracy support the Curricular Competencies

## Math K-9 – Curricular Competencies

| Grade | Reasoning and analyzing | Understanding and solving | Communicating and representing | Connecting and reflecting |
|---|---|---|---|---|
| K-5 | • Use reasoning to explore and make connections<br>• Estimate reasonably<br>• Develop mental math strategies and abilities to make sense of quantities<br>• Use technology to explore mathematics<br>• Model mathematics in contextualized experiences | • [illegible] | | |
| 6-9 | • Use logic and patterns to solve puzzles and play games<br>• Use reasoning and logic to explore, analyze, and apply mathematical ideas<br>• Estimate reasonably<br>• Demonstrate and apply mental math strategies<br>• Use tools or technology to explore and create patterns and relationships, and test conjectures<br>• Model mathematics in contextualized experiences | • [illegible]<br>relevant to local First Peoples communities, the local community, and other cultures | | |

- **Interpret:** students extract information from the context and identify the parameters or the limitations of the mathematical model used to represent the contextualized experience
- **Apply:** students translate their thinking process into a visual model
- **Solve:** students find a solution to the problem using the model to explain their strategy
- **Analyze:** students evaluate other strategies or solutions which enhance their model
- **Communicate:** students describe their thought process or explain their model with reference to the context

# Literacy and Numeracy are embedded in Provincial Assessments

Interpret

**Model: Snowshoe Hare and Lynx**

YUKON NEWS

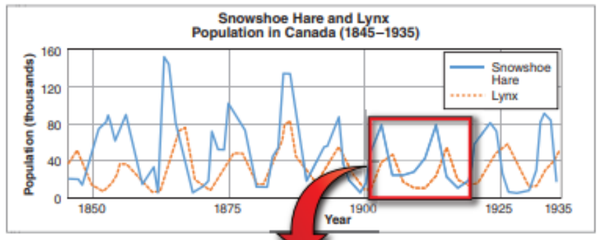
## Lynx sightings increasing

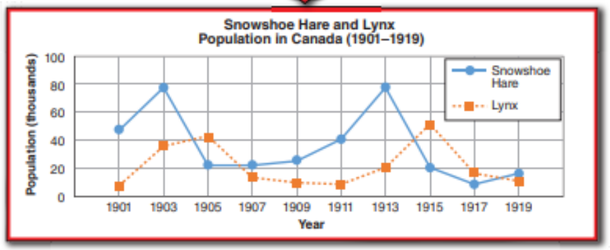
Lynx rely almost entirely on snowshoe hare as their main food source. Each lynx eats approximately 2 snowshoe hare every 3 days. Over the years, both populations have risen and fallen. The relationship between the snowshoe hare population and the lynx population has been documented for over 200 years.

Snowshoe Hare

| Year | Snowshoe Hare Population (x 1000) | Lynx Population (x 1000) |
|---|---|---|
| 1901 | 47 | 6 |
| 1903 | 77 | 35 |
| 1905 | 21 | 42 |
| 1907 | 21 | 13 |
| 1909 | 25 | 9 |
| 1911 | 40 | 8 |
| 1913 | 77 | 20 |
| 1915 | 20 | 51 |
| 1917 | 8 | 16 |
| 1919 | 16 | 10 |

Lynx




Analyze

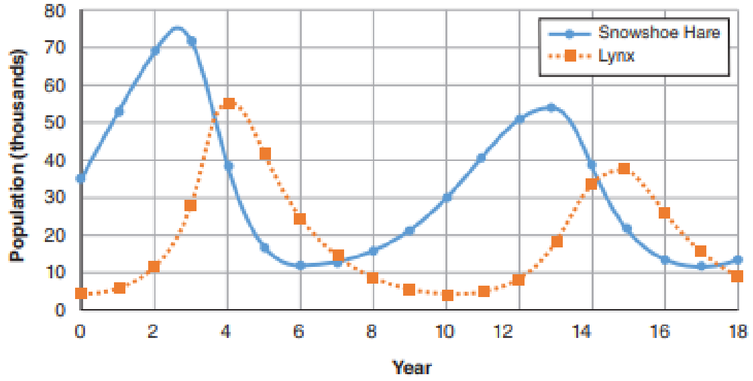
**Model: Snowshoe Hare and Lynx**

26. **Answer this question on the yellow sheet.**

The relationship between the numbers of snowshoe hare and lynx is tightly linked, as the snowshoe hare make up over 95% of the diet of the lynx. The graph shows the cyclical nature of this relationship.

Biologists have noted a recent decline in the numbers of snowshoe hare and lynx at the peak of their cycles. They are estimating a similar percentage decrease in the next cycle as well.

**Population of Snowshoe Hare and Lynx in Canada**



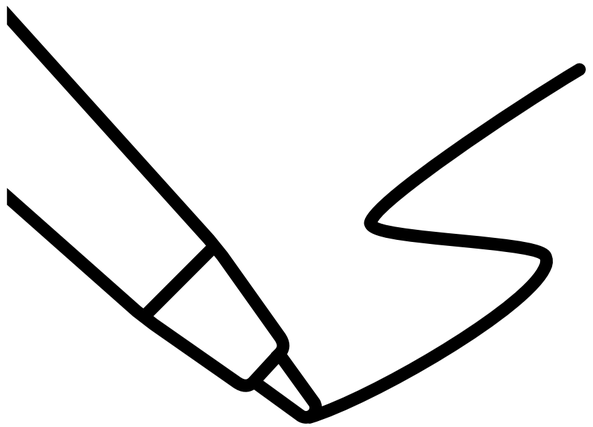

Apply/Solve

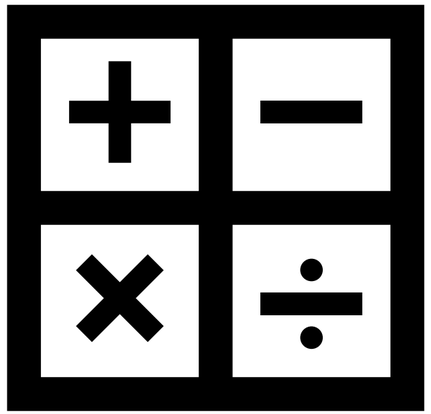
Using the information in the graph above, predict the peak populations of each species in their next cycle. Create a graph starting at year 16 showing population numbers and the time (year) when these peaks will occur.

Explain and justify your solution. Be sure to include any calculations, estimations, and assumptions you made.

Communicate

# K-4 Foundational Learning





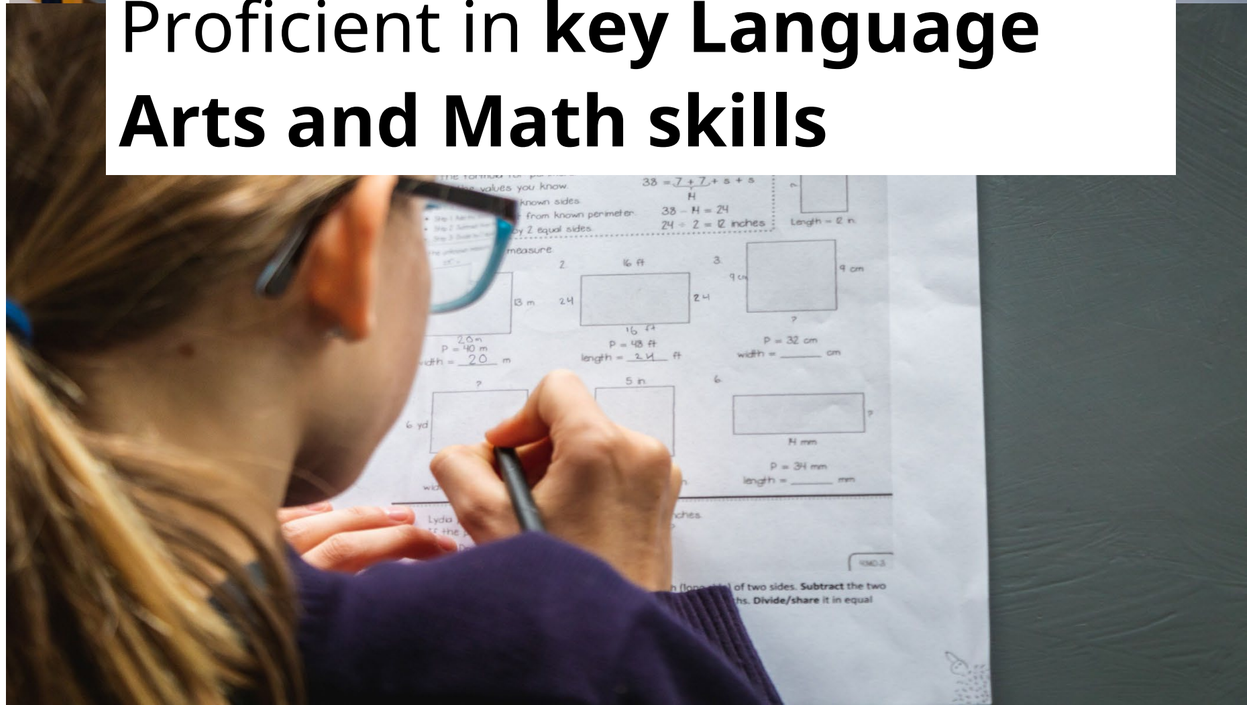
## K-4 English and French Immersion Language Arts

- Outline the progression of key language skills:
  - Reading
  - Writing
  - Oral language
- Identify areas of strengths and areas of support and intervention

## K-4 Mathematics

- Outline the progression of key mathematics concepts:
  - Number Sense
  - Computational Fluency
  - Patterning and Algebraic Thinking
  - Geometry and Measurement
  - Data and Probability
  - Financial Literacy
- Provide definitions and suggested teaching strategies

The K-4 Foundational Learning Progressions describe Proficient in **key Language Arts and Math skills**



## Skill: Financial Literacy

Students with a strong understanding of Financial Literacy will develop the tools required to practice sound financial decision making in the future. This skill provides real world context for demonstrating learning in Number Sense and Computational Fluency.

| Sub-skill | Proficiency Descriptor *(for the end of the school year)* | | | | |
|---|---|---|---|---|---|
| | **Kindergarten** | **Grade 1** | **Grade 2** | **Grade 3** | **Grade 4** |
| **Currency**<br><br>*Identifying, understanding the value of, and combining coins and bills fluently, with an emphasis on Canadian currency.* | • Observe and describe Canadian coins (loonies and toonies) by their size and design<br>• Count the number of coins in sets of up to 10 coins (connection to Number Sense)<br>• Calculate the total price to make $5 and $10 using representations such as price tags and play money (e.g., a muffin is $3 and juice is $2; pay with 5 loonies) (connection to Computational Fluency) | • Identify, name, and describe Canadian coins (nickels, dimes, quarters, loonies, toonies) by their size, design, and value<br>• Sort and count the number of different types of coins in a mixed set (connection to Number Sense)<br>• Use number sense strategies such as **skip-counting** to determine the value of a group of the same type of coin<br>• Calculate the total price (in whole numbers up to $20) by adding and subtracting and by using representations such as price tags and play money (connection to Computational Fluency) | • Use number sense strategies such as sorting and **skip-counting** to determine the value of a mixed set of coins to 100 cents<br>• Create different combinations of coins to make 100 cents (connection to Operations)<br>• Solve 2-digit addition and subtraction questions (using cents rather than decimal notation, e.g., 25¢ + 10¢ = 35¢) by using a variety of **concrete** (play money), **pictorial, or symbolic forms** (connection to Computational Fluency) | • Identify, name, and describe Canadian bills and coins by their size, design, and value<br>• Determine the value of mixed combinations of bills and coins (using whole dollars, or cents rather than decimal notation) (connection to Operations)<br>• Solve 3-digit addition and subtraction questions (using whole dollars, or cents rather than decimal notation, e.g., 125¢ + 110¢ = 235¢) (connection to Computational Fluency)<br>  ○ Using a variety of **concrete** (play money), **pictorial, or symbolic forms**<br>  ○ Explain their thinking process (e.g. describe the coins and bills to be used to pay) | • Solve **contextual problems** with currency (e.g., 4-digit addition and subtraction questions including those with decimal notation, and 2- and 3-digit multiplication and division by 1-digit questions (connection to Computational Fluency))<br>  ○ Using a variety of **concrete** (play money), **pictorial, or symbolic forms**<br>  ○ Apply a variety of strategies to calculate totals and make change, (e.g., counting up, counting back, decomposing and rounding to the nearest nickel)<br>  ○ Explain their thinking process (e.g. justifying the item(s) purchased based on budget and savings) |
| **Financial Planning and Decision Making**<br><br>*Concepts of earning, saving, spending, and making financial plans and decisions.* | • Role play financial transactions such as in a restaurant, bakery, or store<br>• Understand and explore concepts such as wants and needs (Career Education, Core Competencies) | • Role play financial transactions such as in a restaurant, bakery, or store. Explore trade games to understand that objects can have variable value or worth (tools, food, toys)<br>• Understand and explore concepts such as<br>  ○ Roles, responsibilities, and jobs in the community (Career Education)<br>  ○ Integrating the concept of needs and wants (Core Competencies) | • Understand and explore concepts such as<br>  ○ Roles, responsibilities, and jobs in the community (Career Education)<br>  ○ Spending and saving money connected to needs and wants (Social Studies, Core Competencies) | • Understand and explore concepts such as<br>  ○ Payments can be made in flexible ways (e.g., cash, cheques, credit, electronic transactions, trading goods and services)<br>  ○ Different developmentally and contextually appropriate ways of earning money to reach a financial goal (e.g., recycling, holding bake sales, selling items, walking a neighbour's dog) (Core Competencies)<br>  ○ Trading and forms of currency in First Peoples history (Social Studies) | • Make financial decisions involving earning, spending, saving, and giving and explain their thinking process<br>• Understand and explore concepts such as<br>  ○ Payments can be made in flexible ways (e.g., cash, cheques, credit, electronic transactions, trading goods and services)<br>  ○ Different developmentally and contextually appropriate ways of earning money to reach a financial goal (e.g., recycling, holding bake sales, selling items, walking a neighbour's dog) (Core Competencies) |

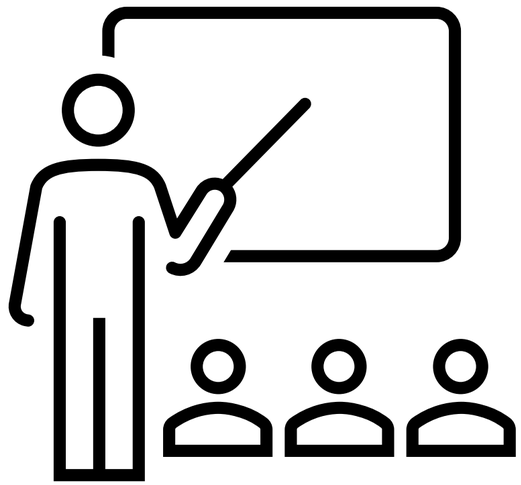
## Skill: Financial Literacy

Terms are found in multiple skills and sub skills. While the definitions are the same, in some instances the examples may vary due to the Skill and Sub-skill they are supporting.

**Contextual problem:** a problem that is set within a real-world or practical situation, requiring students to apply mathematical concepts to solve it. Students identify and apply the best mathematical operation and strategy to fit the context, and based on their current knowledge and available tools

**Skip counting:** method of counting in which students add a number to the previous number (also known as multiples). For example, skip counting nickels (5¢), starting at 0 is 0¢, 5¢, 10¢, 15¢, ...

# Learning Pathways Supporting Resources



## Curricular Connections provide starting points for planning competency development

| Skill<br>• Sub-skill | Learning area | Curricular Competency | Student learning opportunity |
|---|---|---|---|
| Interprets<br>• Understands the real-world problem<br>• Extracts relevant information<br>• Identifies parameters and limitations | Career Education (K/1) | Identify and appreciate their personal attributes, skills, interests, and accomplishments | In a group discussion, students talk about their personal interests and skills, which the teacher sorts and records on a Venn diagram. The students guess, identify, and discuss why the terms are placed accordingly. |
| | Science (4) | Suggest ways to plan and conduct an inquiry to find answers to their questions | Students investigate different materials that claim to insulate. They compare the materials with each other, as well as with advertised ratings and units (e.g., “Keeps liquids hot for 15 hours!” or “Rated to –10°C”). As a class, students discuss their understanding of insulators, and identify a way to compare the advertised claims of heat insulation, using the same testing method and units. |
| | Social Studies (Human Geography 12) | Draw conclusions about the variation and distribution of geographic phenomena over time and space (patterns and trends) | Students research and compare a locally grown or produced food with food that is imported domestically or internationally. They study the impact on jobs and the economy of local versus non-local products by collecting and interpreting data and statistics regarding local growing seasons, impacts of weather and lost crops, price differences, travel times/shipping distances, tariffs, or other economic factors within the supply and delivery chain. |

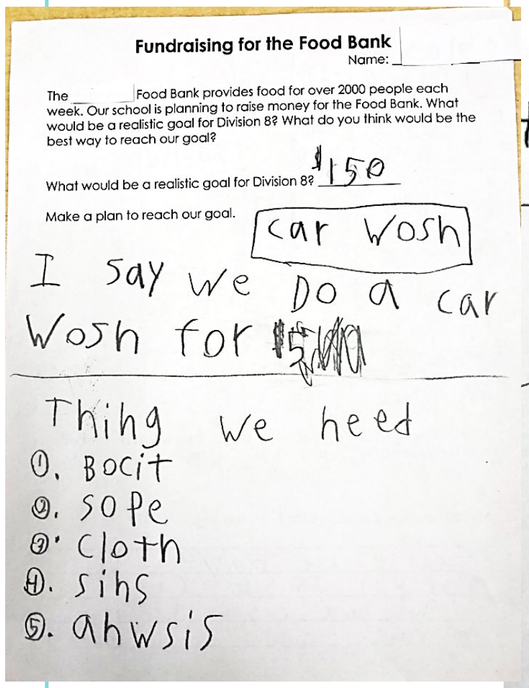
# Teaching and Learning Stories:

## Math Grade 2/3

### Teacher's Observations

**This student was able to set a realistic goal with parameters and use different mathematization strategies** to calculate how many cars we would need to wash.

When I asked them to explain their thinking they said, "First I kept adding $5 until I reached $50. I know that 50+50+50=150 so I didn't have to keeping adding the 5's one at a time. I counted the 5's I added, 10 all together so then I knew 10+10+10=30 ***(multiplicative thinking)***. That's pretty good, we only have to wash 30 cars. I think we might be able to do even more."



Fundraising for the Food Bank

Name: _____

The _____ Food Bank provides food for over 2000 people each week. Our school is planning to raise money for the Food Bank. What would be a realistic goal for Division 8? What do you think would be the best way to reach our goal?

What would be a realistic goal for Division 8? $150

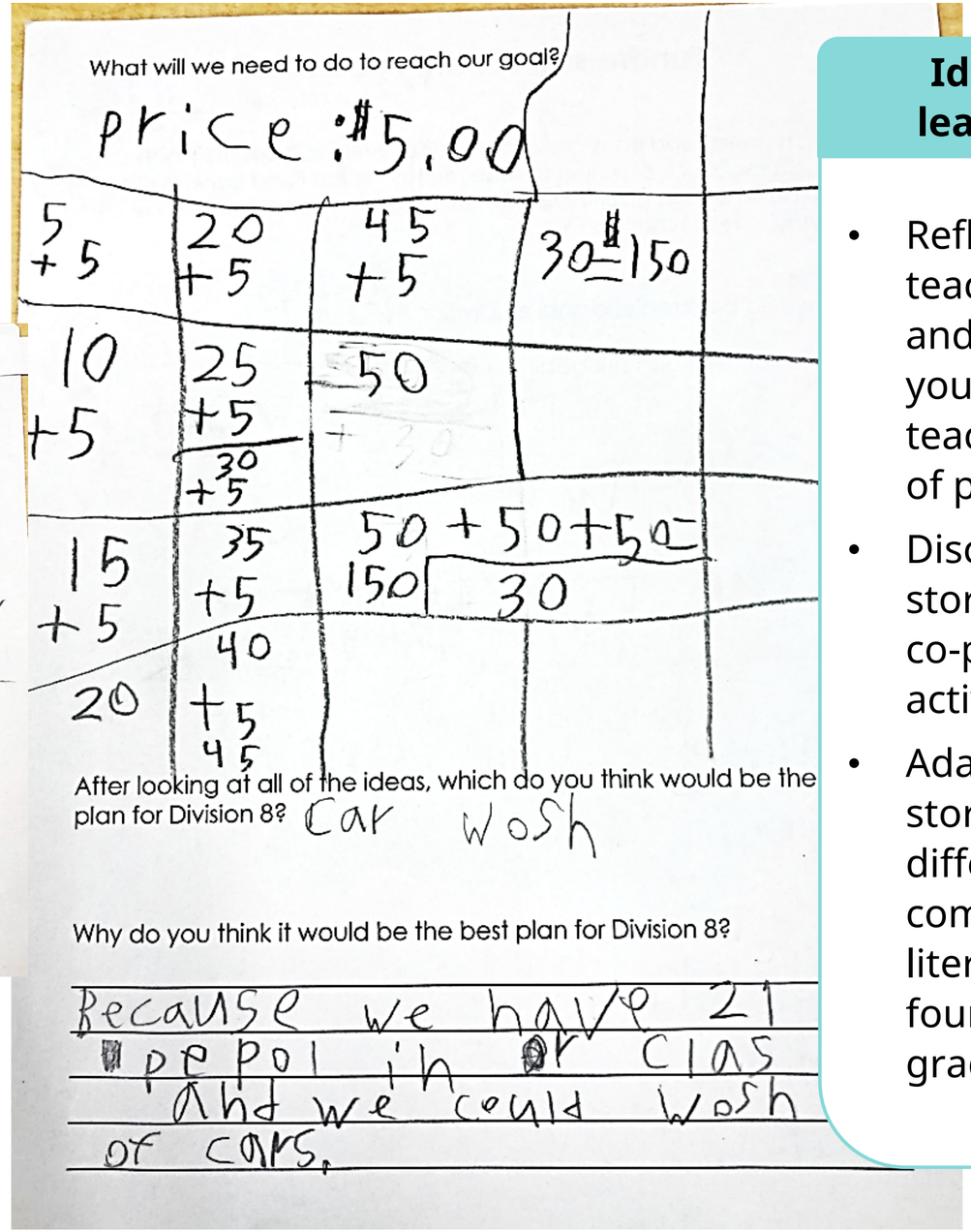
Make a plan to reach our goal.

car wosh

I say we do a car wosh for $5

Thing we need

1. Bocit
2. Sope
3. Cloth
4. sihs
5. ahwsis



What will we need to do to reach our goal?

price: $5.00

5 +5 = 10 +5 = 15 +5 = 20

20 +5 = 25 +5 = 30 +5 = 35 +5 = 40 +5 = 45

45 +5 = 50 + 30 = 150

30 = 150

50 + 50 + 50 = 150

30

After looking at all of the ideas, which do you think would be the plan for Division 8? Car wosh

Why do you think it would be the best plan for Division 8?

Because we have 21 people in our class and we could wosh of cars.

### Ideas for using learning stories:

- Reflect on the teacher's planning and assessment. Do you agree with the teacher's assessment of proficient?
- Discuss the learning story with others and co-plan a similar activity
- Adapt the learning story to emphasize different curricular competencies, literacy/numeracy or foundational skills, or grade levels

# Teaching and Learning Stories:
# Foundational Math Grade 3

Ministry of Education and Child Care

BC Learning Pathways: Teaching and Learning Stories
K-4 Foundational Mathematics

## GRADE 3 Mathematics: Planning a Barn (Perimeter and Area)

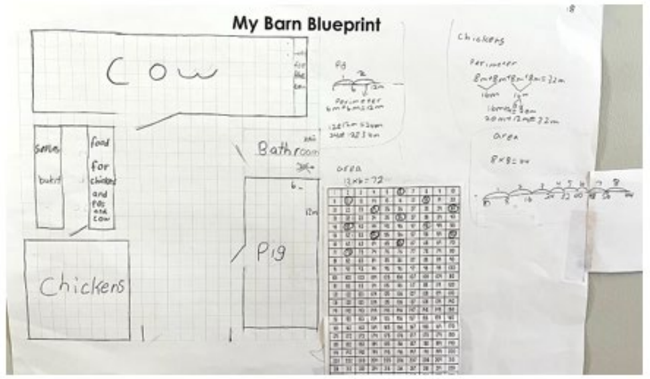
### Summary of Learning Opportunity

The students in this class had spent time earlier in the year investigating measurement. They estimated and measured the lengths, perimeters, and areas of different objects and spaces around the ~~classroom, and~~ estimated and measured the perimeter and area of different shapes in a worksheet. In this lesson, the students were in the middle of a multiplication unit. We designed this task so that the students could connect concepts of multiplication and area. Working across math strands encourages flexible problem-solving, builds adaptive thinking and requires students to make decisions about which strategies to use. This higher-level thinking builds critical reasoning and supports long-term success in math.

| | | | |
|---|---|---|---|
| Mathematics Grade 3 | Learning Standards | Competencies | **Understanding and Solving:**<br>• Develop, demonstrate, and apply mathematical understanding through play, inquiry, and problem solving<br>• Develop and use multiple strategies to engage in problem solving |
| | | Content | • Addition and subtraction facts to 20 (emerging computational fluency)<br>• Multiplication and division concepts<br>• Measurement, using standard units (linear, mass, and capacity) |

| Foundational Math Connections | Instruction |
|---|---|
| MATHEMATICS: Geometry and Measurement (Spatial Sense) – Measurement | 1. Students were challenged to plan the layout of animal enclosures in a barn. While the animals would spend most of their time outside in the farmyard, they would need a safe space indoors. I gave the students approximate measurements for farm animals:<br>• Cow 2-3 meters long, 1 meter wide<br>• Pig 1-2 meters long, 140 cm wide<br>• Chicken 40-60cm long, 20 cm wide<br>2. Students would need to give the animals enough space based on their size, and a space for supplies. We also discussed other space planning considerations like:<br>• How big of a space would each animal need?<br>• How would the animals get from the barn door to their enclosure, and how big of a path would they need? |
| MATHEMATICS: Computational Fluency (operations) – Understanding of Operations | 3. Students were given paper containing both blank and graph paper sections to plot out their barns. Students were asked to determine the area and perimeter of each of the animal enclosures and show their work. |


### Demonstrations of Student Learning, Teacher Assessment, and Reflection

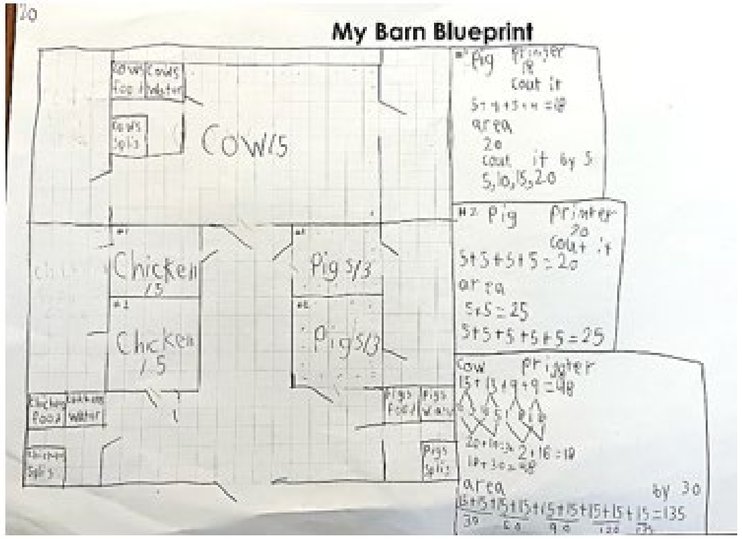



#### Teacher's Observations and Assessment

This student was able to use the measurements of the different animals to estimate the space needed to create enclosures for them. They were also able to create pathways for the animals to get in and out of the barn. This student used foundational computational fluency skills such as showing multiplication in different symbolic forms like a number line and hundred chart and was able to explain their strategies. They are **proficient** in their mathematical understanding and problem-solving skills.

* This student was clearly able to record and explain their thinking about perimeter and area. When asked what perimeter was, they said, "Perimeter is around the outside edge of the shape so for the pig's, I counted 12 on one side so I knew the other side would be 12, then I counted 6 on the top so it would be 6 on the bottom. 6+6=12 and 12+12=24, then I added 24+12=36". This demonstrates **proficiency** in measurement.

* This student used symbolic forms to demonstrate their understanding of multiplication as skip counting a number of times. For example, they used an open number line to calculate the area of the chicken enclosure (jumping by 8, 8 times to get to 64), a hundred chart to calculate the area of the pig enclosure (jumping by 6, 12 times to get to 72). This demonstrates **proficiency** in computational fluency skills.




#### Teacher's Observations and Assessment

This student was able to use the measurements of the different animals to estimate the space needed to create enclosures for them. They were also able to create pathways for the animals to get in and out of the barn. The student used different **strategies** to determine the area and perimeter of each enclosure:

* For the smaller enclosures, they counted the sides of each square around the border of the shape (perimeters) or the total squares inside the shape (area). The counting of the sides and squares indicated that the student understood what the perimeter and area were (either the distance around the shape or the inside of the shape). This student also used different equations to determine the perimeter and area of each enclosure. For example, for the area of #2 pig enclosure, the student first used a known multiplication fact (5 x 5 = 25) and then used repeated addition (5 + 5 + 5 + 5 + 5 = 25).

* For the cow enclosure, the student used addition for the perimeter. When I asked them to explain their thinking, they responded, "I made the numbers more friendly to work with. I didn't know what 15+15 equals, so I broke it up into 10 and 5. When I asked how they solved the area, they were able to use the previous calculation as an addition strategy. They said, "I knew from the perimeter that 15+15=30, so then I just grouped them together into groups of thirty. Counting by 30's is easy for me because I can just use my fingers to keep track 30, 60, 90, 120. Then I added 15 to make 135."

This student used **foundational computational fluency skills** such as decomposing and recomposing, was able to explain their strategy, and demonstrated their knowledge that multiplication is related to repeated addition. They are **proficient** in the competencies and content assessed in this task.

#### Sample Report Card Comment

The proficiency indicators can also be used to provide descriptive feedback during conferences with parents and through written report card comments.

Sample comment for student:

• *Student* is able to use different strategies to determine the area and perimeter of different shapes.
• *Student* understands the process of multiplication. They are able to use repeated addition to solve equations. We will continue to work with *Student* in learning different strategies to assist them when multiplying (i.e. an open number line, skip counting).
• *Student* is able to develop and use multiple strategies when engaging in problem solving activities.

# Les Histoires d'enseignement et d'apprentissage: Mathématiques et Éducation artistique

## 4e et 5e années

## La géométrie à travers l'art de Kandinsky

### Réflexion de l'enseignante

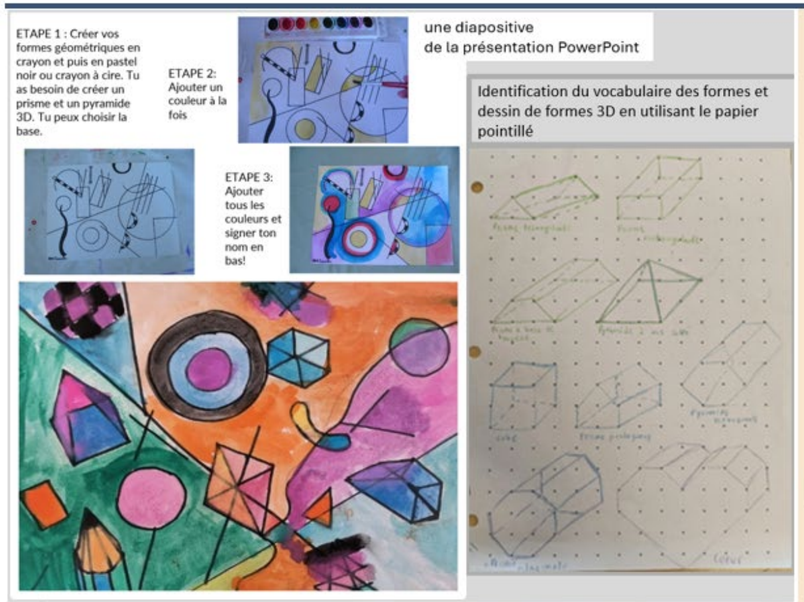
Les ressources de la série *Parcours d'apprentissage en C.-B.* m'ont permis de m'engager de manière créative avec le contenu mathématique. C'était plus engageant pour tous les apprenants et cela a permis aux élèves de développer et de pratiquer diverses compétences en numératie et en littératie.

Avec les activités de préapprentissage — les fiches de travail, les activités avec les géoboards, les leçons au tableau et la pratique du vocabulaire avec les mains — les élèves acquièrent une base importante en français pour pouvoir communiquer un concept mathématique de plusieurs façons. L'intégration de l'art dans les mathématiques a donné aux élèves un sentiment d'accomplissement et de plaisir, en particulier à ceux qui n'aiment généralement pas les mathématiques. Les élèves étaient engagés dans la leçon, et en se concentrant sur le vocabulaire, cela leur a fourni les outils nécessaires pour communiquer efficacement leurs idées en immersion française.

Le recours à divers types d'évaluation a encouragé des occasions d'expression créative, tout en maintenant l'engagement dans la tâche. Permettre aux élèves de s'exprimer dans la classe d'immersion française est particulièrement important pour développer de solides compétences en communication.

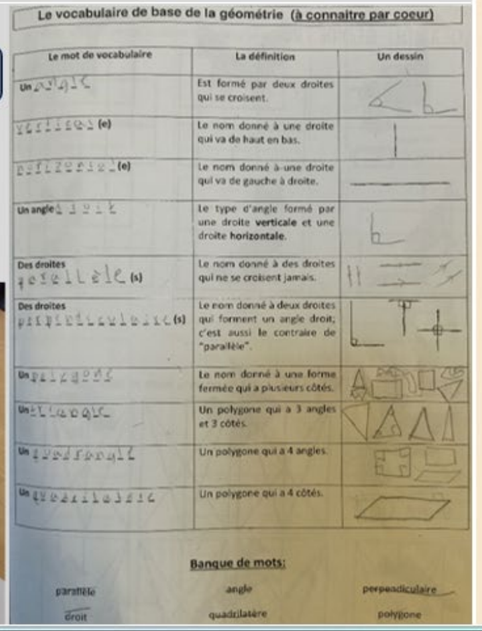
| Liens en numératie et en littératie | ⇒ | Compétences acquises, mises en pratique ou évaluées |
|---|---|---|
| **NUMÉRATIE** :<br><br>**Applique – Représente le problème mathématique**<br><br>Représente le problème mathématique en utilisant du matériel de manipulation, des diagrammes ou des équations familières | ⇒ | ○ Les polygones réguliers et irréguliers<br>○ Le classement des prismes et des Pyramides<br>○ Le périmètre de figures géométriques régulières et irrégulières<br>○ Créer des œuvres d'art en appliquant des idées inspirées par l'imagination, par l'investigation, par l'expérimentation et par l'apprentissage par le jeu |
| **LITTÉRATIE** :<br><br>**Communique les idées et informations – Exprime des idées et informations**<br><br>Décrit les idées ou informations en utilisant des matériaux pertinents du<br><br>domaine d'apprentissage | ⇒ | ○ Communiquer un concept mathématique de plusieurs façons |

### Travail de l'élève – Observations, évaluation et réflexion par l'enseignante




Vocabulaire géométrique

Activités de préapprentissage




### Observations et évaluation par l'enseignante

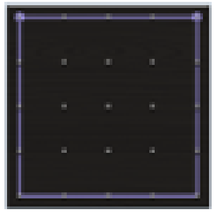
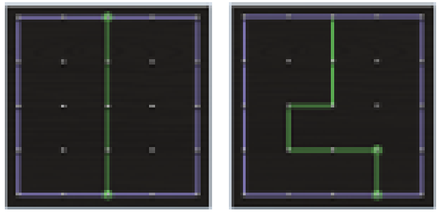
**- Compétence acquise -**

L'élève a pris soin de bien dessiner les formes. Les formes reflètent une bonne compréhension du contenu, car elles sont bien étiquetées et respectent la définition de chaque forme. Elle est restée à la tâche, concentrée sur son travail. D'habitude, elle est très forte en mathématiques, s'ennuie facilement et termine ses tâches très rapidement. Pour ce travail, elle s'est investie et a aimé le défi d'inventer et de créer des formes par elle-même. Elle a choisi d'incorporer toutes les couleurs et de créer des dessins plus complexes, comme un cœur et un prisme octogonal.

Dans son projet final, elle a montré une forte compréhension de la création de polygones, de prismes et de pyramides. Elle a utilisé une règle pour tracer des lignes droites et précises. Elle a démontré sa capacité à visualiser et à explorer des concepts mathématiques en m'expliquant verbalement son produit final. Dans sa présentation, elle a pu identifier correctement et utiliser un vocabulaire mathématique précis et varié pour parler de son œuvre d'art. Elle a aussi fait preuve de créativité en créant un crayon et d'autres prismes à base de quadrilatères quelconques. Le projet lui a permis de mettre en valeur sa pensée créatrice.

Sneak Peek

# Teaching Strategies and Learning Resources

| | | | |
|---|---|---|---|
| **Fractions and Decimals**<br><br>*Fractions and decimals are numbers which can represent a part of a whole, part of a region, part of a set, or part of a length.* | **Fractions**<br>• Represent fractions in concrete, pictorial, and symbolic forms<br>  ▫ As part of a whole (e.g., $\frac{1}{2}$ of a granola bar), part of a region (e.g., half the room is covered by carpet), part of a set (e.g., 2 out of 15 buttons are blue), using a number line (e.g., 2 $\frac{1}{2}$ is halfway between 2 and 3), or as a part of a standard measurement (e.g., 5/10 cm)<br>  ▫ Order and compare fractions with the same denominators (e.g., $\frac{4}{5} > \frac{3}{5} > \frac{1}{5}$)<br>  ▫ Order and compare fractions with the same numerators (e.g., $\frac{4}{5} > \frac{4}{6} > \frac{4}{10}$)<br>• Identify and write fractions in concrete (e.g., measuring cups for baking), pictorial (e.g., colouring 2 out of 15 buttons blue), and symbolic (e.g., ½) forms. Use mathematical language for fraction benchmarks (e.g., zero, half, whole)<br>**Decimals to hundredths**:<br>• Represent a decimal to hundredths in concrete, pictorial, and symbolic forms:<br>  ▫ As part of a whole (e.g., $0.50), part of a region (e.g., 1.75 acres), using a number line (e.g., 3.23 is between 3 and 4), or as a part of a standard measurement (e.g., 72.36 kg) | **Fractions on Geoboards *(Students can represent fractions in concrete, pictorial, and symbolic forms)***<br>• Geoboards with 5x5 pegs (4x4 squares) area ideal as a beginning tool<br>• Materials: geoboards, elastic bands (optional: geoboard recording sheets; pencil crayons)<br>• Define the whole geoboard as ~~the~~ whole – teacher may have students 'outline' this with elastic bands- for example, see image<br>  <br>• Students use elastic bands to show dividing the area of the geoboard into fractional pieces of quarters, halves, and eighths<br>  ▫ Reinforce the idea that the fractional parts have to have the same area but do not need to be the same shape; encourage creativity in finding ways to show the fractional pieces in unique ways<br>  ▫ For example, both of these boards show halves by area<br>  <br>• Teacher may give other challenges by changing the size of the whole (e.g., the whole is a rectangle of 2 x 4 squares, the whole is a triangle made by the diagonal from | Geoboard dot paper printables can be found online or in many black-line master collections in teacher resource textbooks.<br><br>Virtual geoboards (free)<br>https://nrich.maths.org/interactive-environments/virtual-geoboard<br>https://apps.mathlearningcenter.org/geoboard/ |

# BC Learning Pathways support teachers to report student learning

- **Curricular Connections** provide examples of how to develop the curricular competencies and skills in the classroom
- **Cross-Curricular and Foundational Learning Progressions**:
  - define and describe what proficient student learning looks like
  - can be used as a jumping off point for descriptive feedback
- **Teaching and Learning Stories**:
  - provide examples of what proficient student learning looks like
  - provide examples of student-centered descriptive feedback

# Cross-curricular and Foundational Learning Progressions support descriptive feedback

Descriptive feedback is:

- Concise
- Strengths-based
- Describes student learning
- Identifies specific areas for future growth
- Uses family and student-friendly language
- Lesson plans and the learning standards of the curriculum do not need to be summarized

**Mathematics Grade 3: Proficient**

Quinn:

- Demonstrated proficient problem-solving strategies in the Barn Design project through **understanding the context**, **drawing** an accurate design, **using multiple strategies to find** perimeter, and **describing their thinking** during a Math Talk.
- Practiced and solidified addition **math facts** to 20 and showed understanding of **multiplication using arrays (physical objects)**
- Should continue their use of **physical objects as tools** for problem solving multiplication and division
- Is encouraged to take more risks to **communicate their problem-solving approach, decisions, and reasoning** during Math Talks

# Key Messages

- The Learning Pathways support teachers in **planning, teaching, assessing, and reporting** within the revised curriculum.
- The Learning Pathways support teachers in helping students develop **foundational, literacy, and numeracy** skills connected to each learning area, including Language Arts and Math.
- The Learning Pathways support teachers with language to **assess and report** students' competency and conceptual development

# Further Information

- **BC Learning Pathways**: https://curriculum.gov.bc.ca/learning-pathways
- **K-12 Student Reporting Policy** Communicating Student Learning Guidelines
- **Additional Reporting Policy info for teachers:** https://curriculum.gov.bc.ca/reporting/information-for-educators-and-school-leaders
- **Reporting Policy info for parents:** https://curriculum.gov.bc.ca/reporting/resources-for-parents-and-caregivers
  scroll down and click on Communicating Student Learning: Information for Parents and Caregivers Package to find information in 8 different languages
- **Reporting Policy Webinar series:** https://curriculum.gov.bc.ca/reporting/k-12-student-reporting-webinar-series
  10-minute videos; modules 4, 5, and 7 recommended for teachers

# QUESTIONS?

Please email us with follow up questions!

LearningPathways@gov.bc.ca

# Thank you

Merci