Bachelor of Education (Elementary)
Unit Plan Template EDMA 3200

Unit Title: Division **Number of Lessons:** 8 **Days:** 8

Your Name: Jennilee Fraser & Samantha N. Sipos **Subject(s):** Math - Division **Grade:** 4/5

Rationale

The goal of this unit is to introduce our 4/5 students to the concept of making equal groups in preparation for learning division and its relationship to multiplication in an 8 lesson unit. We are incorporating aspects of FFPoL through the use of storytelling in most of the lessons to help students make important connections between equal groups, division, and multiplication. This is important because it is an essential step in preparing students for more advanced math concepts in the future, and builds on their previous knowledge of addition, subtraction and multiplication. Division has real world implications as it helps us divide and share numbers within groups, which is used in team building, dividing products equally among classmates, dividing up parts to make music, art projects, and dance choreography, as well as dividing up equal chores in family and community.

Overview

Lesson 1: Introduction to CGI (quotative group measuring) → **Team teach**
Samantha N. Sipos
Lesson 2: CGI (repeated subtraction)
Lesson 3: CGI (backwards skip counting)
Lesson 4: Storybook "The Doorbell Rang" (number line)
Jennilee Fraser
Lesson 5: Division into multiplication
Lesson 6: Division BINGO - using dice to make their bingo cards.
Lesson 7: Division BINGO - playing!
Lesson 8: Storybook "Remainder of One"→ **Team teach**

Indigenous Connections/ First Peoples Principles of Learning

Learning is embedded in memory, history and story → We have incorporated story into most of the lessons within our unit as a way for students to connect to content and make meaning by drawing on their previous knowledge and interest in storytelling. *Learning involves patience and time* → Understanding that this may be the first time that students have been introduced to the formal concept of division, students may need to remind themselves that learning new things does not always come easily. We have used several CGI lessons to help students practice division in a familiar way so that they can become comfortable with the method and begin to relax enough to fully engage in their learning.

CORE COMPETENCIES

Communication	Thinking	Personal & Social
Connecting to **Seklép (coyote)** who represents our active communicator. Students will listen actively during CGI lessons and be encouraged to share ideas with peers and teachers through discourse at the end of every lesson. Students will be actively working in groups or partners to help them share their thinking and gain new ideas and perspectives when it comes to mathematical thinking. ● Communicating ***Connecting and engaging with others*** *Students engage in informal and structured conversations in which they listen, contribute, develop understanding and relationships, and learn to consider diverse perspectives.* ***Focusing on intent and purpose*** *They understand that communication can influence, entertain, teach, inspire, and*	Connecting to **sqlélten (salmon)** who represents creativity, adaptability, persistence, and resilience. Students will aim to incorporate creativity in solving division problems using pictures, manipulatives, number lines, or algorithms. They will be faced with difficult tasks as problems get progressively harder, but will persevere to accomplish them by drawing on the consistency and reliability of previous lessons. ● Creative thinking ***Creating and innovating*** ***Generating and incubating*** *The capacity for creative thinking expands as individuals increase their range of ideas and concepts to recombine them into new ideas.* ***Evaluating and developing*** ● Critical and reflective thinking	Connecting to **kenkéknem (bear)** who represents courage and self-awareness, and **speqmíc (swan)** who represents collaboration and respectfulness. Students will aim to be strong and courageous learners as they put forward their best effort during each of our lessons, relying on the assistance from their peers and teachers to help them through the learning process. ● Personal awareness and responsibility ***Self-advocating*** *They are able to express their needs and seek help when needed, find purpose and motivation, act on decisions, and advocate for themselves.* ***Self-regulating*** *They can persevere in difficult situations, and to understand how their actions affect themselves and others.* ***Well-being***

help us make sense of the world and our experiences. ***Acquiring and presenting information*** *Students communicate by receiving and presenting information.* *They inquire into topics of interest and topics related to their studies.* ● Collaborating ***Working collectively*** *Students combine their efforts with those of others to effectively accomplish learning and tasks.* *As members of a group, they appreciate interdependence and cooperation, commit to needed roles and responsibilities, and are conscientious about contributing.* ***Supporting group interactions*** *Students engage with others in ways that build and sustain trusting relationships and contribute to collective approaches.*	***Analyzing and critiquing*** *They reflect to consider purpose and perspectives, pinpoint evidence, use explicit or implicit criteria, make defensible judgments or assessments, and draw conclusions.* *Students have opportunities for analysis and critique through engagement in formal tasks, informal tasks, and ongoing activities.* ***Questioning and investigating*** *They develop and refine questions; create and carry out plans; gather, interpret, and synthesize information and evidence; and reflect to draw reasoned conclusions.* ***Designing and developing*** ***Reflecting and assessing*** *They reflect on and assess their experiences, thinking, learning processes, work, and progress in relation to their purposes.*	● Social awareness and responsibility ***Building relationships*** *They are aware and respectful of others' needs and feelings and share their own in appropriate ways.* ***Contributing to community and caring for the environment*** ***Resolving problems*** *They show empathy, disagree respectfully, and create space for others to use their voices.* ***Valuing diversity*** *They are inclusive in their language and behaviour and recognize that everyone has something to contribute.*

BIG IDEAS

Subject Name: **Mathematics**	Subject Name: **Arts Education**	Subject Name:
● Development of computational fluency and multiplicative thinking requires analysis of patterns and relations in multiplication and division.	● Engaging in creative expression and experiences expands people's sense of identity and belonging.	

LEARNING STANDARDS & ASSESSMENT

Curricular Competencies	Content	Assessment
• Use reasoning to explore and make connections • Model mathematics in contextualized experiences • Engage in problem-solving experiences that are connected to place, story, cultural practices, and perspectives relevant to local First Peoples communities, the local community, and other cultures • Develop, demonstrate, and apply mathematical understanding through play, inquiry, and problem solving • Communicate mathematical thinking in many ways • Explain and justify mathematical ideas and decisions	• Multiplication and division of two- or three-digit numbers by one-digit numbers • multiplication and division facts to 100 (introductory computational strategies)	*Lesson 1-5:* observation/conversation *Lesson 6:* Bingo card collected *Lesson 7:* Bingo card checked *Lesson 8:* CGI creation Learning Map for each student

Prerequisite Concepts and Skills

Grade 3 content in MATH & ELA: • multiplication and division concepts • elements of story • features of oral language • oral language strategies • metacognitive strategies

Teacher Preparation Required

Lesson 1	**CGI Lesson**
Lesson 2	**CGI Lesson**

Lesson 3	**CGI Lesson**
Lesson 4	**"The Doorbell Rang", beads, pipe cleaners**
Lesson 5	**Splat Math slides, Word Problem**
Lesson 6	**Bingo cards, dice**
Lesson 7	**Student completed bingo cards, two bowls with BINGO and 36 division combinations**
Lesson 8	**"Remainder of One", CGI worksheets**

Cross-Curricular Connections

This unit is linked closely to ELA and Arts education as students will be using stories to express mathematical problems, as well as expanding on the problem in creative ways by writing backstories to characters, drawing pictures/visuals, and creating their own mathematical stories.

Universal Design for Learning (UDL)

1. **MULTIPLE MEANS OF REPRESENTATION** – *We provide for multiple means of representation in this unit by*: using a visual aid of a story, reading the story out loud, written representation of the problem

2. **MULTIPLE MEANS OF ACTION AND EXPRESSION** – *We provide multiple means of action and expression in this unit by*: encouraging students to solve math problems in a way that is comfortable for them i.e. written, visual depiction, orally, on a whiteboard in a group, on paper on their own

3. **MULTIPLE MEANS OF ENGAGEMENT** – *We provide multiple means of engagement in this unit by*: allowing students to work in small groups or individually, encouraging students to share their ideas with classmates, having students engage in class discussions to understand multiple ways of addressing the same problem

Differentiated Instruction (DI)

Visual → Storybooks, visual mathematical thinking representation in CGI, Bingo cards, students can visually represent how they solve the math problem
Auditory → Oral math stories, students can verbally explain how they solve the math problem

Reading & Writing → Creating backstories to math problems, writing CGI stories, written explanation of how they solve the math problem **Kinesthetic** → Beads, dice, students can use manipulatives to show how they solve the math problem

Overview of Lessons:
Lesson 1

Lesson Name & Time (Minutes Allotted):	Quotative group measuring-intro to CGI
Learning Standards: Curricular Competencies	• Engage in problem-solving experiences that are connected to place, story, cultural practices, and perspectives relevant to local First Peoples communities, the local community, and other cultures • Develop, demonstrate, and apply mathematical understanding through play, inquiry, and problem solving • Communicate mathematical thinking in many ways
Learning Standards: Content	• Multiplication and division of two- or three-digit numbers by one-digit numbers • multiplication and division facts to 100 (introductory computational strategies)
Instructional Objectives (SWBAT…):	SWBAT listen to the math story and record it down SWBAT understand the math story and create a number sentence
Assessment:	- observation of groups while working - having students explain their ideas/thinking/rationale - learning map
Teaching Strategies:	Animated storytelling, creating imagery of location, using voices for characters Guiding students through CGI steps (number sentence, visual representation)
Materials:	- math story - whiteboard/markers OR paper/pencils
LESSON ACTIVITIES	
Introduction/Hook:	T (teacher) gives ss (students) an animated story performance! Nigel wants to play a dice game with his friends. He has 4 bags of dice to share. Each bag has 5 dice inside. How many dice does Nigel have all together?
Body:	T divide ss into small groups of 3 or 4 - ss work together to create number sentence and solve the problem

	T circulates to gauge where ss are/how they are progressing Extension: Ss show visual representation of answer in multiple ways T has observed and asked three groups to share their way of tackling the problem As ss share, T asks guiding q's to expand/clarify for others
Closure:	T brings ss attention to division and multiplication being linked T asks ss if there are similarities/differences in the 3 ways that have been represented

Lesson 2

Lesson Name & Time (Minutes Allotted):	Repeated Subtraction
Learning Standards: Curricular Competencies	• Engage in problem-solving experiences that are connected to place, story, cultural practices, and perspectives relevant to local First Peoples communities, the local community, and other cultures • Communicate mathematical thinking in many ways
Learning Standards: Content	• Multiplication and division of two- or three-digit numbers by one-digit numbers
Instructional Objectives (SWBAT…):	SWBAT listen to the math story and record it down correctly SWBAT understand the math story and create a number sentence SWBAT show their understanding of the problem in more than 2 ways
Assessment:	- observation of groups while working - having students explain their ideas/thinking/rationale - learning map
Teaching Strategies:	Animated storytelling, creating imagery of location, using voices Reviewing CGI strategies previously
Materials:	- math story - whiteboard/markers OR paper/pencils
LESSON ACTIVITIES	
Introduction/Hook:	T (teacher) gives ss (students) an animated story performance! Mr. Smithers has 36 dollars that he wants to spend on books. Each book costs $9. How many books could he buy?
Body:	T reviews the CGI "guidelines" → create a number sentence, show your work answering the number sentence in at least 2 ways

	Extension: ss can create (write or draw) a backstory about Mr. Smithers, design the bookstore, design a book, write a blurb for the book etc. T has observed and asked three groups to share their way of tackling the problem As ss share, T asks guiding q's to expand/clarify for others
Closure:	T asks ss if there are similarities/differences in the 3 ways that have been represented T tries to focus on a repeated subtraction example

Lesson 3

Lesson Name & Time (Minutes Allotted):	Backwards Skip Counting
Learning Standards: Curricular Competencies	• Engage in problem-solving experiences that are connected to place, story, cultural practices, and perspectives relevant to local First Peoples communities, the local community, and other cultures • Develop, demonstrate, and apply mathematical understanding through play, inquiry, and problem solving • Communicate mathematical thinking in many ways
Learning Standards: Content	• Multiplication and division of two- or three-digit numbers by one-digit numbers
Instructional Objectives (SWBAT…):	SWBAT listen to the math story and record it down correctly SWBAT understand the math story and create a number sentence SWBAT show their understanding of the problem in more than 3 ways
Assessment:	- observation of groups while working - having students explain their ideas/thinking/rationale - learning map
Teaching Strategies:	Animated storytelling, creating imagery of location, using voices Reviewing CGI strategies previously
Materials:	- math story - whiteboard/markers OR paper/pencils
LESSON ACTIVITIES	
Introduction/Hook:	Jaewon has 44 jellybeans. He needs to fill 4 empty jars with equal amounts of jelly beans. How many jelly beans go in each jar? What if there were 11 jars?

Body:	T reviews the CGI "guidelines" → create a number sentence, show your work answering the number sentence in at least 3 ways Extension: ss can create (write or draw) a backstory about Jaewon, draw a visual to match the story etc. T has observed and asked three groups to share their way of tackling the problem As ss share, T asks guiding q's to expand/clarify for others Extension: Give a higher number of Jellybeans (multiple of 4 higher than 11)
Closure:	T asks ss if there are similarities/differences in the 3 ways that have been represented T tries to focus on a backwards skip counting example

Lesson 4

Lesson Name & Time (Minutes Allotted):	Number line
Learning Standards: Curricular Competencies	• Engage in problem-solving experiences that are connected to place, story, cultural practices, and perspectives relevant to local First Peoples communities, the local community, and other cultures • Develop, demonstrate, and apply mathematical understanding through play, inquiry, and problem solving • Communicate mathematical thinking in many ways
Learning Standards: Content	• Multiplication and division of two- or three-digit numbers by one-digit numbers
Instructional Objectives (SWBAT…):	SWBAT listen to the math story SWBAT make connections from story to addition and division concepts SWBAT use a number line to express/visualize division
Assessment:	- observation of groups while working - learning map
Teaching Strategies:	Animated storytelling, creating imagery of location, using voices
Materials:	- beads - pipe cleaners - "The Doorbell Rang" storybook
LESSON ACTIVITIES	
Introduction/Hook:	Ss create "number lines" with beads and pipecleaners

Body:	Read "The Doorbell Rang" As each child is added to the story, they will demonstrate with number line
Closure:	Ss create their own number line

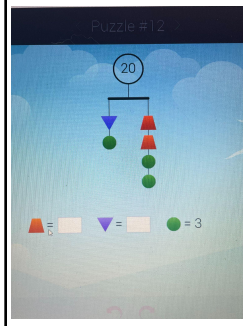
Lesson 5

Lesson Name & Time (Minutes Allotted):	Division into Multiplication/35-45 mins
Learning Standards: Curricular Competencies	• Engage in problem-solving experiences that are connected to place, story, cultural practices, and perspectives relevant to local First Peoples communities, the local community, and other cultures. •Model mathematics in contextualized experiences •Use reasoning to explore and make connections
Learning Standards: Content	• Multiplication and division of two- or three-digit numbers by one-digit numbers • multiplication and division facts to 100 (introductory computational strategies)
Instructional Objectives (SWBAT…):	**SWBAT:** Group numbers together to make equal teams **SWBAT:** Understand the relationship between multiplication and division **SWBAT:** Recognize that there are different ways to solve problems (flexibility)
Assessment:	**What:** Observation **How:** Listening to conversations and explaining their thinking will show me how well they are connecting with the mathematical content
Teaching Strategies:	multimedia, discussion, observation, follow-up.
Materials:	Smart board, whiteboard, white board pens.
LESSON ACTIVITIES	
Introduction/Hook:	Splat Math Exercise. I'll place some slides up with a number of dots on the screen. I'll have the students talk about how many dots they see on the screen, and how did they know that? Did they count them individually? Did they group them together? If they grouped them together did how many did they group together? I'll them move to the slide where they have the same number, but an equal amount of dots have been covered by the Splat. I'll ask students how many dots are under the Splat and how they know that.

	I'll do a few of these exercises, getting progressively more challenging to engage them in grouping numbers.
Body:	I'll give them a word problem on the board and split them into groups of three. Once they are in their groups we'll read the problem together as a class. "The School of the Arts is having a Fun Day Festival! Each class will be competing against each other classes in different relay activities. Each class has 24 kids, and each class has to make as many equal teams as we can. How many equal teams can one class make? Check for comprehension: Ask students to retell the story. What is the most people we can have on a team? (one team of 24), Why? Possible misconceptions: Only one team of 24 can be made. Students will then enter into their work period within their groups. Students can work on individual white boards, or classroom white boards where available. Students who are struggling can reduce the total amount of students to 12 instead of 24.
Closure:	Discourse: Groups will then be asked to share their strategies on how they were able to divide 24 into equal amounts: (1 groups of 24, 2 groups of 12, 3 groups of 8, 4 groups of 6, 5 groups of 4, 24 groups of 1). I'll then ask students to compare their strategies with other groups in the class. What is the same? What is different? I'll then ask students to come up with a number sentence to identify the algorithm (give examples if students are stuck ie 24/2 or 2x12) to connect the multiplication aspect of grouping numbers.

Lesson 6

Lesson Name & Time (Minutes Allotted):	Division Bingo Creation/ 35-45mins
Learning Standards: Curricular Competencies	• Develop, demonstrate, and apply mathematical understanding through play, inquiry, and problem solving

	• Communicate mathematical thinking in many ways • Explain and justify mathematical ideas and decisions
Learning Standards: Content	• Multiplication and division of two- or three-digit numbers by one-digit numbers • multiplication and division facts to 100 (introductory computational strategies)
Instructional Objectives (SWBAT…):	**SWBAT:** Make connections between multiplication and division
Assessment:	**What:** Bingo card hand in **How:** Shows how students have connected with the material and gives me a good idea of who is still struggling
Teaching Strategies:	Multimedia, direct instruction
Materials:	smart board, bingo sheet hand out, dice, calculators.
LESSON ACTIVITIES	
Introduction/Hook:	Number mobiles game! Using the Number Mobile app, we will play together. The number at the top in the cirlce is the total, and then sometimes you're given the value of a shape. The goal is to find which number correspond to each shape to make each sides equal.  https://solveme.edc.org/Mobiles.html
Body:	Students will be given a bingo card and a pair of 6 sided dice. Students will create their bingo cards in partners using rolling the dice to decide division equations. Bingo cards will have the equation (eg rolling a 2 and a 5, students will multiply the 2 and the 5 to get 10. They will pick a square and write either 10/2 = 5 or 10/5 = 2).

	Check for understanding: Am I dividing the numbers on the dice? What am I doing with the sum of the dice. Possible misconceptions: Dividing the two numbers on the dice. Students will then enter into their work period, where they are filling in their bingo cards. I'll spend some time walking around the room to assist students who need help or don't quite understand what is being asked of them.
Closure:	Discourse: Have students choose another pair to share their thinking and strategies with. I will then have them come together as a class and ask them to explain what their strategies were and if they noticed any patterns in their card creation.

Lesson 7

Lesson Name & Time (Minutes Allotted):	Division Bingo play/35-45 mins
Learning Standards: Curricular Competencies	• Develop, demonstrate, and apply mathematical understanding through play, inquiry, and problem solving • Communicate mathematical thinking in many ways
Learning Standards: Content	• Multiplication and division of two- or three-digit numbers by one-digit numbers • multiplication and division facts to 100 (introductory computational strategies)
Instructional Objectives (SWBAT…):	**SWBAT:** Make connections between multiplication and division
Assessment:	**What:** Students hand in their BINGO cards at the end of the game. **How:** I can see how they were able to use division and multiplication together, and assess their learning.
Teaching Strategies:	Game host
Materials:	Two bowls with B I N G O and the 36 division combinations, prize.
LESSON ACTIVITIES	
Introduction/Hook:	I'll give students 10 minutes to finished up their bingo cards from yesterdays class in preparation for our game play.

Body:	I'll have students return to their desk where I will have two bowls, one with B I N G O's in them and others with dice 36 dice division combinations. Students will be told that the goal is to make a division symbol (line through the middle, and two at the nope and bottom of the N).
Closure:	Winner: The first student to make the division symbol will win the prize.

Lesson 8

Lesson Name & Time (Minutes Allotted):	Storybook "Remainder of One"
Learning Standards: Curricular Competencies	• Engage in problem-solving experiences that are connected to place, story, cultural practices, and perspectives relevant to local First Peoples communities, the local community, and other cultures • Develop, demonstrate, and apply mathematical understanding through play, inquiry, and problem solving • Communicate mathematical thinking in many ways
Learning Standards: Content	• Multiplication and division of two- or three-digit numbers by one-digit numbers • multiplication and division facts to 100 (introductory computational strategies)
Instructional Objectives (SWBAT…):	**SWBAT:** Make connections between from the story to multiplication and division concepts **SWBAT:** Create their own CGI story problems
Assessment:	**What:** Students will hand in their CGI lesson, Learning Map **How:** We will see how effectively students have connected with the material based on the story they come up with.
Teaching Strategies:	Read aloud, observation, discussion
Materials:	"Remainder of One", CGI worksheet
LESSON ACTIVITIES	
Introduction/Hook:	Before we read the story, we will explain to students that they are going to be creating a CGI Lesson on the story themselves, so it's important to pay attention to the details. Both teachers will read "The Remainder of One" together to students.

Body:	Students will then be put into partners and have them working on their own CGI lesson. They are to come up with a question based on the themes of the book, mat ching number sentence and then switch with another couple to solve their question using a strategy they haven't used yet. Extension: Create their ant for the army, giving them a name, costume, and possibly a backstory.
Closure:	Students will then share their thinking with the class. After their share session, they will hand in their

Resources

"The Doorbell Rang"
"Remainder of One"
Learning map
BINGO sheet
https://solveme.edc.org/Mobiles.html Math mobile.
https://stevewyborney.com/category/splat/ Splat Math

Extensions to Unit

Unit could extend into a lesson on long division because "Remainder of One" leads us into long division concepts of remainders.

Reflections