# **BOOKS TO BUILD ON**

# Teaching and earning Ideas

Thank you for downloading this Books to Build On Teaching and Learning "Seed" for you to plant in the garden of your professional practice! We are excited for you to use it in a good way to further Indigenous Education and reconciliation for you and your students. Please take them as inspiration and adapt them to your needs. See below for some important information.



These teaching and learning ideas originate from the Books to Build On: Indigenous Literatures for Learning website. Please check out the website, as well as the Indigenous Education resources at the Werklund School of Education, for more information on working with Indigenous literatures! We would love to hear your feedback on our educational materials! Please find our contact information on the website.

https://werklund.ucalgary.ca/teaching-learning/indigenous-literatures-learning

# Open Education Resource



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> How do we engage with Indigenous literatures in teaching and learning?

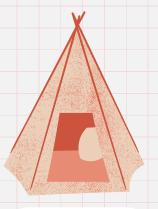
By Erin Spring & Aubrey Hanson

"Starting with Story" allows us to centre Indigenous voices, knowledges, people, and experiences in our teaching and learning

Why do we believe in teaching and learning with Indigenous literatures? During our years of engagement with Indigenous knowledge systems, communities, literatures, and scholarship, we have come to know that stories are at the heart of our work. Stories embody communities and their ways of knowing, being, and doing in an appealing form—reaching the heart, not only the head. Stories are inherently relational, in that a teller and listener are drawn into relationship with each other and with the story being told. And because relationships call for mutual responsibility, storytelling as a mode of sharing knowledge draws people into reciprocal webs of connection. Stories are not just for entertainment; they are there to guide how we live our lives. Thomas King's oft-repeated line at the end of each chapter in the Truth about Stories lecture series is an illustration of this principle. King (2003) tells the reader that the story is "yours. Do with it what you will . . . But don't say in the years to come that you would have lived your life differently if only you had heard this story. You've heard it now" (p. 29). When deciding how to engage others in the work of Indigenous education, then, we believe in starting with story. We appreciate storytelling for how it respects Indigenous knowledge systems, ensures that knowledge remains rooted in context, and emphasizes the value of personal voice and collective listening. Stories are a key way into relational work in education.

## Social responsibility is at the heart of our work, we are working for better futures

Teaching and learning with Indigenous literatures is part of the broader work of Indigenous Education. We believe that work in education must be socially responsible and committed to communities. Significant social impact is being created by the process of reconciliation and with Indigenous-focused teaching and learning happening across the country. We see our task as working to nourish Indigenous communities and knowledge systems, while challenging racism and colonialism. This work is also about fostering open and reciprocal relationships between Indigenous and non-Indigenous peoples. This call for social responsibility informs our collaborations in the Books to Build On project.



## Small Number Counts to 100

Written by Veselin Jungic & Mark MacLean
Page 1 of 6

Resource Guide & Unit Plan Teacher-Author: Emily Rozitis

Resources used & possible concerns

- Video: Small Number Counts to 100
- Inspired by narrations from Rena Sinclair of the Siksika Nation
- Written by: Veselin Jungic & Mark MacLean
- Illustrated by: Simon Roy

#### **Possible Concerns:**

- Access to technology to play the video.

Watch the video and/or print out the story transcript here:

https://www.sfu.ca/mathcatcher/StoriesMovies/CountsTo100.html#credits

Written by: Veselin Jungic & Mark MacLean

## Author Background: Veselin Jungic

"Veselin is a Canadian mathematician and educator. He is devoted to bringing mathematics alive for the most varied audiences – from young to old, from rural to professional, from the most academically challenged to the most advanced students. Veselin has developed and taught the math component of the SFU Aboriginal University Preparation Program, and he also organizes and coordinates the Math Catcher Outreach Program. His goal is to encourage and support mathematical education among the aboriginal population. Veselin was awarded the 2015 3M National Teaching Fellowship. Veselin is a co-author (together with Dr. Mark MacLean, Department of Mathematics, UBC) of Small Number's stories and the producer of all Small Number animated films." (Simon Fraser University, 2022.)

#### Mark MacLean

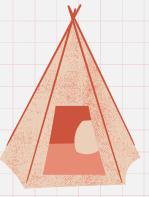
"I am involved in writing children's stories to encourage interest in mathematics amongst Indigenous children. This is a project with Veselin Jungic at SFU: Adventures of Small Number: A collection of short stories. There are some wonderful animations done from the illustrations for these books. There are versions in a number of First Nations languages, including Blackfoot, Cree, Squamish, and Halq'eméylem, Sliammon, Nisgaa, Heiltsuk, and Huu-ay-aht. There are also versions in English and French." (MacLean, 2021.)

Author/creator & literature background

**Unit Contents** 

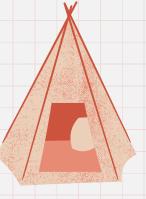
#### **Unit Contents:**

Small Number Inquiry Question Math Lesson Skip Counting Math Lesson



# Small Number Counts to 100

Written by Veselin Jungic & Mark MacLean
Page 2 of 6



#### Targeted Grade 1 Skills include:

#### Math:

### "General Outcome: Develop Number Sense. Specific Outcome:

- 1. Say the Number sequence 0 to 100 by:
  - a.1s forward between any two given numbers
  - b.1s backward from 20 to 0
    - i.[C, CN, ME, V]
- 2. Subitize (recognize at a glance) and name familiar arrangements of 1 to 10 objects or dots.
  - i. [C, CN, ME, V]
- 3. Demonstrate an understanding of counting by:
  - a. indicating that the last number said identifies "how many"
  - b. showing that any set has only one count
  - c. using counting-on
  - d. using parts or equal groups to count sets.
    - i. [C, CN, ME, R, V]
- 4. Represent and describe numbers to 20, concretely, pictorially and symbolically.
  - i. [ C, CN, V]"

(Alberta Education, p.13, 2016.)

Curricular Connections

(also suitable for diverse multi-age disabilities classrooms)

Grade One

### "General Outcome Use patterns to describe the world and to solve problems. Specific Outcomes

- 1. Demonstrate an understanding of repeating patterns (two to four elements) by:
  - a. describing
  - b.reproducing
  - c.extending
  - d.creating

patterns using manipulatives, diagrams, sounds and actions.

i.[C, PS, R, V] [ICT: P2-1.1]"

(Alberta Education, p.14, 2016.)

**Other:** Social Skills- small or large group engagement, turn-taking, visual attention, listening skills (strategies may include personalized seating, whole-body listening, or Give me 5 supports.) Interpersonal language skills.

(Cunningham, Patrica M., Hall, Dorothy P., & Sigmon, Cheryl M., pp.142-143, 1999.)

**All lessons** have a primary focus of early numeracy and exposure and engagement with Indigenous language and culture, through written, visual, and oral storytelling. Additional focus of all lessons in this unit include the multimodal approach to numeracy. Exploring problem solving through visual and oral storytelling.

## Small Number Counts to 100

Written by Veselin Jungic & Mark MacLean
Page 3 of 6

#### Materials

#### **Small Number Counts to 100 Resource Guide includes:**

- Small Number Inquiry Question Math Lesson Resource (1 page)
- Skip Counting Math Lesson Resource (1 page)

#### Other Materials:

- Writing tools (paper/whiteboard, chalk, pencil, crayon, wide-grip marker, etc.)
- Calculator (optional)
- \*Computer/SMARTboard use

#### Rationale

**Big Idea:** This unit plan facilitates pre-academic skill development (math dominant) in early education, such as a typically developing grade one classroom, as well as diverse, multi-age disability-focused learning environments.

**Purpose**: This unit plan supports classrooms with diverse skill levels, promoting engagement with number sense and mathematical skills, in individualized ways. The goal is to create meaningful and authentic mathematical interactions with Jungic & MacLean's video, to engage with math from an Indigenous lens. Mathematically speaking, this resource helps educators to teach number sense, representation, identification, and counting, with clear connections to storytelling and language.

#### **Contents:**

- **Unit Contents**
- 2 Multidisciplinary Lessons, with a focus in mathematics.
- Small Number Counts to 100 Resource Guide (attached as Appendix, following Unit Plan)

Lesson 1:

Small Number

**Inquiry Question** 

Unit Plan for

## Small Number Counts to 100

Written by Veselin Jungic & Mark MacLean
Page 4 of 6

**Accommodations include:** 

Communication devices & systems, physical equipment to support movement, adult facilitation of social skills to form groups

# Math Connections and Strategies: "General Outcome: Develop Number Sense. Specific Outcome:

- Say the Number sequence 0 to 100 by:
  - 1s forward between any two given numbers
  - 1s backward from 20 to 0
    - [C, CN, ME, V]
- Subitize (recognize at a glance) and name familiar arrangements of 1 to 10 objects or dots.
  - [C, CN, ME, V]
- Demonstrate an understanding of counting by:
  - indicating that the last number said identifies "how many"
  - showing that any set has only one count
  - using counting-on
  - using parts or equal groups to count sets.
    - [C, CN, ME, R, V]
- Represent and describe numbers to 20, concretely, pictorially and symbolically.
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## "General Outcome Use patterns to describe the world and to solve problems. Specific Outcomes

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  - extending
  - creating

patterns using manipulatives, diagrams, sounds and actions.

■ [C, PS, R, V] [ICT: P2–1.1]"

(Alberta Education, p.14, 2016.)

**Other Skills:** Social Skills- small or large group engagement, turn-taking, visual attention, listening skills (strategies may include personalized seating, whole-body listening, or Give me 5 supports.) Exposure and engagement with Indigenous languages and cultures, through written, visual, and oral storytelling - emphasis on problem-solving.

**Preparation**: Set up the video from this website: <a href="https://www.sfu.ca/mathcatcher/StoriesMovies/CountsTo100.html">https://www.sfu.ca/mathcatcher/StoriesMovies/CountsTo100.html</a></a>
Print the resource for the lesson, Small Number Inquiry Question Lesson Resource (or set it up for digital display.)

#### Activity:

- 1. Present to students that you will be watching a math video, and that together, you will solve the problem.
- 2. Show the video. Use the transcript, as needed, to support students' understanding.
- 3. Pass out (or display) the inquiry question: ask students to discuss their ideas.
- 4. Explain how in the next lesson, you will be solving the problem through several steps. Allow students to make predictions or give their own answers as a collective. Encourage students to count the tipis in the circle to assist in their inquiry.
- 5. Conclude the inquiry for the moment. Come back for lesson 2 at any time.









# Small Number Counts to 100

Written by Veselin Jungic & Mark MacLean
Page 5 of 6

Accommodations include:

Communication Devices & Systems, Slant boards, Adapted writing tools Body Breaks "Chunk" the Activity

# Math Connections and Strategies: <u>"General Outcome: Develop Number Sense.</u> Specific Outcome:

- Say the Number sequence 0 to 100 by:
  - 1s forward between any two given numbers
  - 1s backward from 20 to 0
    - [C, CN, ME, V]

Lesson 2:

Skip Counting

- Subitize (recognize at a glance) and name familiar arrangements of 1 to 10 objects or dots.
  - [C, CN, ME, V]
- Demonstrate an understanding of counting by:
  - indicating that the last number said identifies "how many"
  - showing that any set has only one count
  - using counting-on
  - using parts or equal groups to count sets.
    - [C, CN, ME, R, V]
- Represent and describe numbers to 20, concretely, pictorially and symbolically.
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(Alberta Education, p.13, 2016.)

## "General Outcome Use patterns to describe the world and to solve problems. Specific Outcomes

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**Other Skills:** Social Skills- small or large group engagement, turn-taking, visual attention, listening skills (strategies may include personalized seating, whole-body listening, or Give me 5 supports.) Exposure and engagement with Indigenous languages and cultures, through written, visual, and oral storytelling - emphasis on problem-solving.

**Preparation**: Set up the video from this website: <a href="https://www.sfu.ca/mathcatcher/StoriesMovies/CountsTo100.html">https://www.sfu.ca/mathcatcher/StoriesMovies/CountsTo100.html</a>
Print the resource for the lesson, Small Number Inquiry Question Lesson Resource (or set it up for digital display.)

#### Activity:

- 1. Option to rewatch the video for students, refreshing their memory of the problem to solve.
- 2. Explain how together, you will be answering different questions to help solve the problem in the video.
- 3. Together, use the Skip Counting Math Lesson Resource to guide your problem solving. Option to have students write their answers on a whiteboard or piece of paper, or to print out the actual resource for them to fill in.
- 4. Encourage students to use objects to represent the tipis (for example, post-it notes or blocks) to help them visualize the problem at hand. Allow time for inquiry and exploration after each questions, and reflect on answers as a group. Calculators can also be used as a support, as needed.
- 5. Conclude with a review of your answers, reinforcing the way one can solve a problem in multiple ways.
- 6. Clean up materials from the lesson.

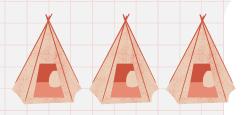












## Small Number Counts to 100

Written by Veselin Jungic & Mark MacLean
Page 6 of 6



Supporting
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Simon Fraser University. (2022) *Small number counts to 100*. Web. https://www.sfu.ca/mathcatcher/StoriesMovies/CountsTo100.html

Simon Fraser University. (2022.) *Small number counts to 100.* Web. https://www.sfu.ca/mathcatcher/StoriesMovies/CountsTo100.html#credits

Simon Fraser University. (2022.) *Contact us- math catcher: Veselin Jungic.* Web. https://www.sfu.ca/mathcatcher/contact.html

About the Teacher-Author:

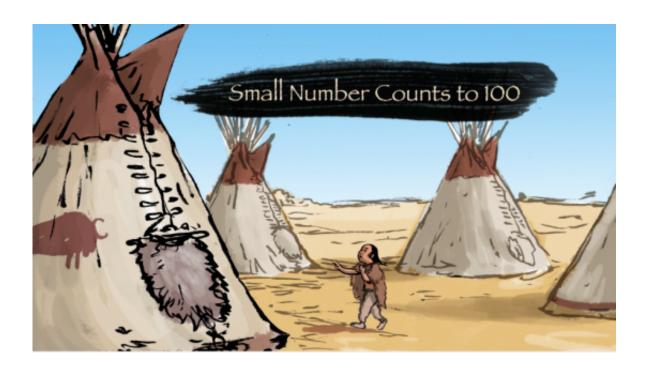
Emily Rozitis has a Bachelors of Arts in French, and a Bachelors of Education in Inclusive Education from the University of Calgary. She is a practicing elementary school teacher who works in a severe disabilities classroom with non-verbal students (ages 6-12.) Emily uses a variety of communication supports in her classroom to promote a differentiated and inclusive literacyrich environment. Her multimodal communication approach to learning includes the use of digital and paper-based communication devices, American Sign Language, assistive technology, and both verbal and visual methods of communication.

Emily believes that literacy, and learning, are for everyone. This resource is designed to be used in a multiple-disabilities classroom to support pre-literacy skills for every student, at every developmental level. Lessons are easily adapted to the typical Pre-K, Kindergarten, and Grade 1 classroom.

Resource Guide for:

# Small Number Counts to 100

Written by Veselin Jungic & Mark MacLean



#### This Resource Guide includes:

- Small Number Inquiry Question Math Lesson Resource (1 page)
- Skip Counting Math Lesson Resource (1 page)

# **Small Number Inquiry Question:**

How did Small Number know that the 100th tipi is the one just south of his grandparents' tipi without actually counting them?



# **Lesson: Skip Counting Inquiry**

Answer these questions together as a class.

How many tipis are in the circle?
How many times do you go around the circle before
you get to 100?
How did Small Number get to 100 without walking
around all the tipis after only 2 rounds?
What is skip counting?
How else could you solve the problem?

#### Interested in learning more? Resources for additional reading:

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- Garneau, D. (2012). Imaginary spaces of conciliation and reconciliation: Art, curation, and healing. *West Coast Line*, 46(2), 28-38.
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- Truth and Reconciliation Commission of Canada. (2015). Truth and reconciliation commission of Canada: Calls to action.