

## BOOKS TO BUILD ON

# Teaching and Learning 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.**



### Books to Build On: Indigenous Literatures for Learning

Okí, Ába wathtech, Danit'ada, Taanishi, Hello, Welcome!

What is this website?

#### Call for new lesson plan donations

Are you interested in contributing to the lesson plan selection available on Books to Build On? Have you written a lesson plan that accompanies an existing resource, or a resource you think we should include? Or, are you interested in creating a lesson plan for one of the resources? If you answered yes to any of these questions, the Books to Build On team would love to hear from you! We

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.



Title of Lesson: Math Indigenous games (grades 5-9)

Name: Emily Blackmore

Bio: Emily has taught for two years in Northern Alberta. She graduated from Werklund School of Education, at the University of Calgary. Her Specialization is Elementary Social Studies and is interested in Indigenous ways of knowing and Land- Based Pedagogy.

Resources used and any possible concerns with resource	<p>Games from: University of Regina. (2009, September). <i>Aboriginal Perspectives: Games from the Aboriginal people of North America</i>. <a href="http://aboriginalperspectives.uregina.ca/games/">http://aboriginalperspectives.uregina.ca/games/</a></p> <p>"This site is maintained by faculty and students at the University of Regina in Regina, Saskatchewan, Canada, from the Faculty of Education, the Faculty of Science and the Saskatchewan Urban Native Teacher Education Program program. It became an internet site in September, 2009."</p> <ul style="list-style-type: none"><li>- <a href="https://epe.lac-bac.gc.ca/100/205/301/ic/cdc/games/chance/stickguessing.html">https://epe.lac-bac.gc.ca/100/205/301/ic/cdc/games/chance/stickguessing.html</a> - Kutepushkunuputuk- Stick Guessing game</li><li>- <a href="http://aboriginalperspectives.uregina.ca/games/game2.shtml">http://aboriginalperspectives.uregina.ca/games/game2.shtml</a> - Stick Dice</li><li>- <a href="http://aboriginalperspectives.uregina.ca/games/game4.shtml">http://aboriginalperspectives.uregina.ca/games/game4.shtml</a>- Hubbub</li><li>- <a href="http://aboriginalperspectives.uregina.ca/games/game6.shtml">http://aboriginalperspectives.uregina.ca/games/game6.shtml</a> - Throw sticks</li></ul>
Author/creator and/or literature background (feel free to use the author's existing words and make sure you cite)	<ul style="list-style-type: none"><li>- University of Regina- Aboriginal Perspectives - traditional game related to math.</li></ul> <p>"Curricula across Canada require teachers to include Aboriginal perspectives in their lessons. The richness and diversity of Canada's Aboriginal peoples present challenges and opportunities for teachers in meeting this requirement. First Nations, Inuit, and Métis peoples constitute Canada's Aboriginal peoples and there are currently over 600 recognized First Nations governments or bands in Canada. Canada's First Nations represent at least ten language families, the Inuit languages form a separate language family, and the Métis have a unique mixed language. The Aboriginal peoples have many different cultural practices, traditions and beliefs."</p> <p>"The Aboriginal Perspectives website contains information that will aid teachers in including Aboriginal perspectives in their lessons. We have used video material featuring Aboriginal people and cultural activities as a base for constructing teaching resources and we invite teachers to use these resources. We also encourage teachers to use this video material to construct their own lessons. We have conducted workshops with teachers from grades 3 to 6 to help them include an Aboriginal perspective in their mathematics lessons. On this web site are the lessons, background material on the Aboriginal themes for the lessons, and a description of the material in the kits that the teachers received at the workshops. Included is a collection of Aboriginal games which provide a rich source of material for the construction of lessons."</p> <p>University of Regina. (2009, September). <i>Aboriginal Perspectives: Games from the Aboriginal people of North America</i>.</p>

	<a href="http://aboriginalperspectives.uregina.ca/games/">http://aboriginalperspectives.uregina.ca/games/</a>
K-12 curricular connection	<p>General outcome: Collect, display and analyze data to solve problems</p> <p>General outcome: Use experimental or theoretical probabilities to represent and solve problems involving uncertainty</p>
Materials Needs	<p>Group 1: Stick Guessing game:  <a href="https://epe.lac-bac.gc.ca/100/205/301/ic/cdc/games/chance/stickguessing.html">https://epe.lac-bac.gc.ca/100/205/301/ic/cdc/games/chance/stickguessing.html</a> - Kutepushkunuputuk- Stick Guessing game</p> <ul style="list-style-type: none"> <li>- Popsicle sticks</li> <li>- Print rules and instructions</li> <li>- Recording document (see appendix 1 below)</li> </ul> <p>Group 2: Stick dice</p> <ul style="list-style-type: none"> <li>- <a href="http://aboriginalperspectives.uregina.ca/games/game2.shtml">http://aboriginalperspectives.uregina.ca/games/game2.shtml</a> - Stick Dice</li> <li>- 6 popsicle sticks - larger width (these are consider the dice)</li> <li>- 12 toothpicks</li> <li>- Print rules and instructions</li> <li>- Recording document (see appendix 2 below)</li> </ul> <p>(The teacher needs to previously decorate or draw designs on the popsicle sticks beforehand)</p> <p>Group 3 Hubbub  <a href="http://aboriginalperspectives.uregina.ca/games/game4.shtml">http://aboriginalperspectives.uregina.ca/games/game4.shtml</a> - Hubbub</p> <ul style="list-style-type: none"> <li>- 5 stone or bottle caps (Considered dice)</li> <li>- 50 popsicles sticks or toothpicks (Considered Counters)</li> <li>- Basket</li> <li>- Print runts and instructions</li> <li>- Recording document (see appendix 3 below)</li> </ul> <p>(The teacher needs to previously draw 2 x's on the stones or bottle caps and 3 stars on the stones or bottle caps.)</p> <p>Group 4: Throw Sticks  <a href="http://aboriginalperspectives.uregina.ca/games/game6.shtml">http://aboriginalperspectives.uregina.ca/games/game6.shtml</a> - Throw sticks</p> <ul style="list-style-type: none"> <li>- 40 stones (create a circle)</li> <li>- 3 sticks</li> </ul>

	<ul style="list-style-type: none"> <li>- 2 feathers (shells, etc)- place makers</li> <li>- Instructions</li> <li>- recording document (see appendix 4 below)</li> </ul> <p>Overall materials:</p> <ul style="list-style-type: none"> <li>- Bins or containers to hold each group's supplies and materials.</li> </ul>
Rationale	<p>Big idea: Students will explore traditional Indigenous games that incorporate math skills</p> <p>Purpose: Students use Indigenous games to explore probability and statistics.</p>
Lesson/activities	<ol style="list-style-type: none"> <li>1. Students might need previous knowledge of Probability and Statistics before this game activity. Alternatively take the first 15 to 20 mins of class to introduce the different group games to the class with the whole class so that all students can eventually play all the games.</li> <li>2. Include classroom management of group work and respectful behavior when working in groups.</li> <li>3. Have students break off into groups of 4. These can be random groups, chosen by the teacher, or pre organized groups.</li> <li>4. Within the groups of 4 have enough supplies for students to work in just groups of 2. (some games are groups of two so the groups of 4 or 6 can break off to the group of two).</li> <li>5. When first starting these games students might need longer time within the groups or Students can rotate through the games after a time limit 15 (have a digital timer to let students know when to rotate.</li> <li>6. Have students display the data on to a diagram, graph, or extend their work on and look at Statistic (see appendix 5)</li> </ol>
Extensions	<p>* This is also a great opportunity if the teacher wants to have a 5th group that it one on one with the teacher doing some specific lesson or assessment.</p>

#### Appendix 1: Group 1 Stick Guessing game

What is the probability of guessing the bundle of sticks?
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Guesses	Even	Odd
1		
2		
3		
4		
5		

#### Appendix 2: Group 2 Stick dice recording sheet

Blank Side up	Painted Side up	Points

\*add additional rows for students to try more rounds.

#### Group 2 stick dice points how to earn points earned

Blank Side up	Painted Side up	Points
6	0	2
0	6	3
3	3	1

\*Any other combination scores 0 points

#### Appendix 3

##### Hubbub recording sheet

Pattern	Points received

\*add additional rows for students to try more rounds

Score Sheet	
Pattern shown	Points
1 of either	0
2 x's	3
3 stars and 2 Blanks	3
2 x's and 3 blanks	3
4 marked sides up	1
5 blank sides up	1
5 marked sides up	8
*any other combination scores 0 points	

Appendix 4:

Throw sticks recording sheet

What are the probability you get:	
	Tally marks
3 blank sides	
2 blanks sides, 1 painted side up	
1 blank side, 2 painted sides up	
3 painted sides up	
Total points received	

Appendix 5:

Extension activity: Have students use their data from the games to fill in the mean, median, mode, and range.

Statistics	Mean	Median	Mode	Range


Supporting Sources (APA):

University of Regina. (2009, September). *Aboriginal Perspectives: Games from the Aboriginal people of North America*. <http://aboriginalperspectives.uregina.ca/games/>

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

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- Truth and Reconciliation Commission of Canada. (2015). *Truth and reconciliation commission of Canada: Calls to action*.