

Integrative Science academic program

DRAFT DOCUMENT #3 (of 5):

reinvigoration – supports required and relationships with AFN doc, AbLKC model, and APCFNC Elders Recommendations

FIVE DRAFT DOCUMENTS

1. work required – overview
2. new courses required – “Science in Community” (SciC)
3. relationships – looking to AFN’s document on supporting students transitioning to PSE, CCL-AbLKC’s *First Nations Holistic Lifelong Learning Model*, and APCFNC/AAEDIRP Elders Project’s Recommendations on *Honouring Traditional Knowledge*
4. relationships – what is Integrative Science ... what is science?
5. relationships – transdisciplinarity

Integrative Science academic program

DRAFT DOCUMENT #3 (of 5):

**reinvigoration – supports required and relationships with
AFN doc, AbLKC model, and APCFNC Elders Recommendations**

**a synoptic look at two major sections within an Assembly of First Nations’
2012 report to show approaches congruent with
recommendations for Aboriginal post-secondary education**

an exploration of the

**Canadian Council on Learning – Aboriginal Learning Knowledge Centre’s
“First Nations Holistic Lifelong Learning Model”**

**a highlight of the eight recommendations for
“Honouring Traditional Knowledge”**

**made by Elders within a research project by the
Atlantic Aboriginal Economic Development Integrated Research Program
(AAEDIRP)**

of the Atlantic Policy Congress of First Nations Chiefs (APCFNC)

www.integrativescience.ca

NOTE about this document:

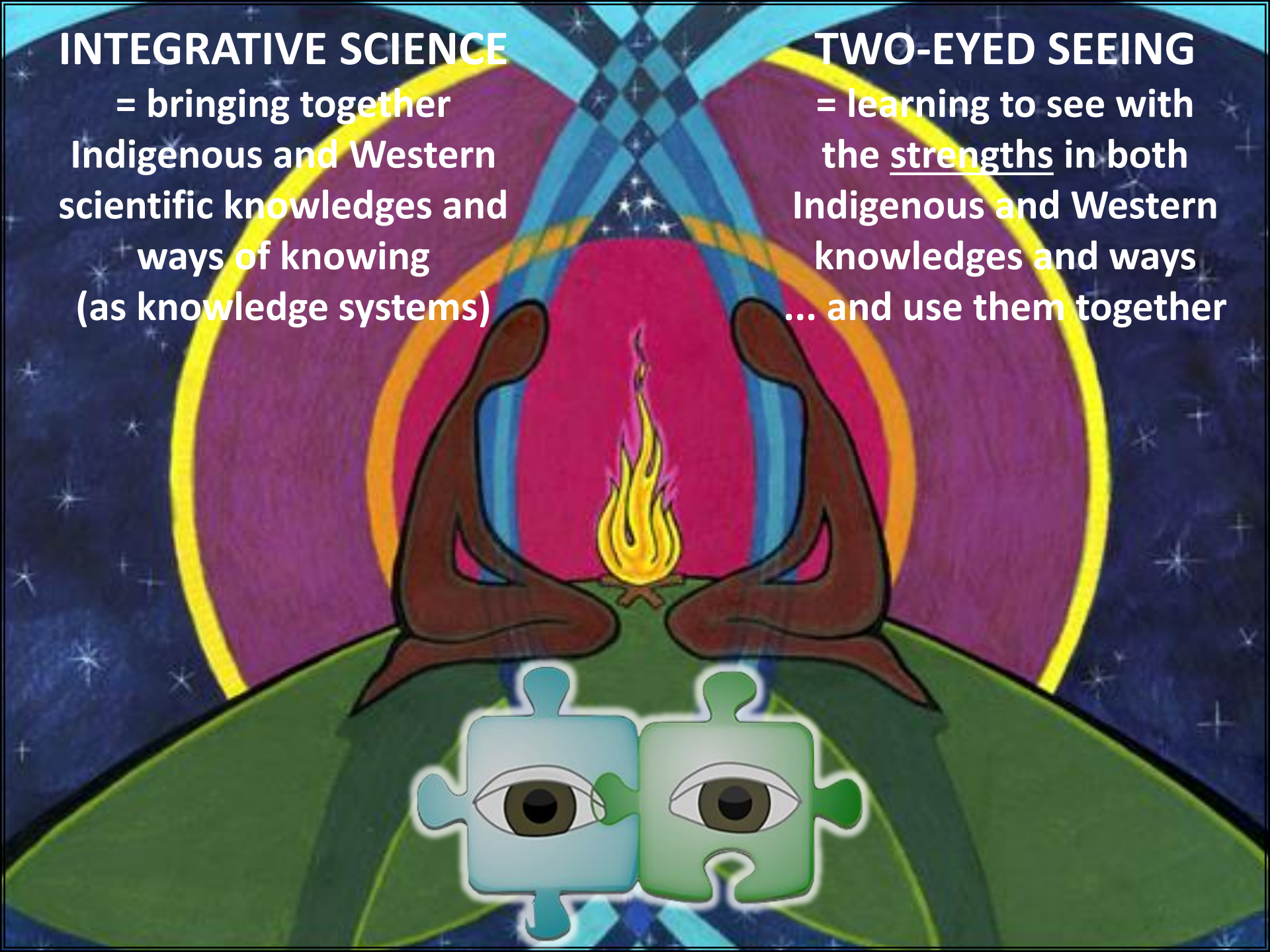
- Prepared in Winter 2014, this document along with others sought to convey understandings pertaining to *Integrative Science as a concentration with innovative MS&T science courses* within the *Bachelor of Science Community Studies (BScCS) four year degree* at Cape Breton University. They were prepared by Cheryl Bartlett to aid anticipated group discussions about potentially reinvigorating the Integrative Science concentration and the BScCS degree, given that both had become non-functional around 2010. The documents were not used and reinvigoration of Integrative Science and the BScCS did not occur.
- Collectively, the documents provide an overview of: (1) the work and resources that would have been required in order to proceed towards an envisioned reinvigoration of Integrative Science, and (2) the overall nature and evolving relationships for Integrative Science from its original vision and configuration as an academic program in the late 1990s guided by Two-Eyed Seeing through to its relationships with national developments in the 2000s and early 2010s. The period 1999 to the mid-2000s saw remarkable success for Integrative Science, including numerous students enrolled in the MS&T courses created for Integrative Science; several students graduate with a BScCS – Integrative Science degree; eleven students earn NSERC-USRAs and some students receive other scholarships; many students engaged in community workshops, summer research projects, and elementary school science outreach; and the Integrative Science program itself receive a national award of recognition from the Canadian Council on Learning.

INTEGRATIVE SCIENCE

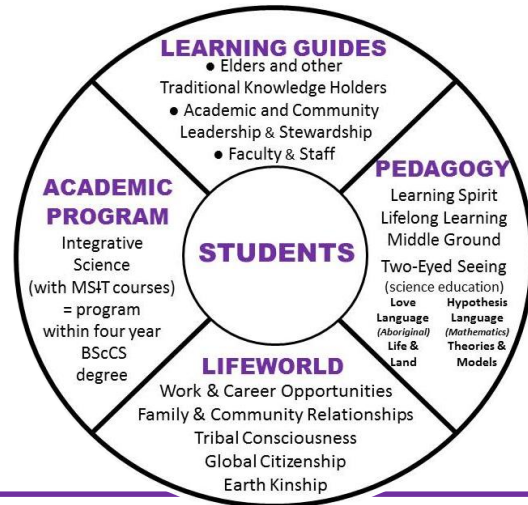
= bringing together
Indigenous and Western
scientific knowledges and
ways of knowing
(as knowledge systems)

TWO-EYED SEEING

= learning to see with
the strengths in both
Indigenous and Western
knowledges and ways
... and use them together

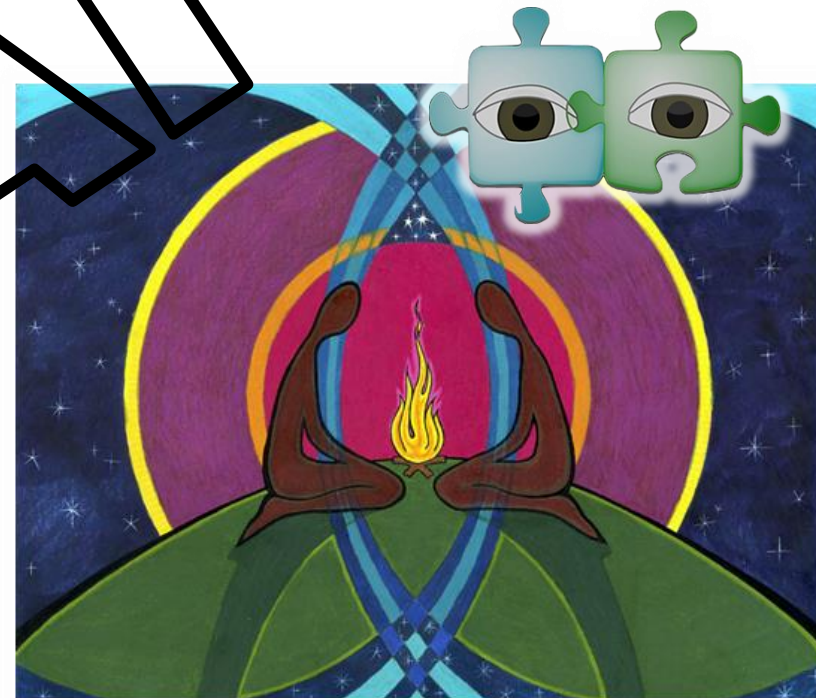


a document to share
“information, resources, positioning, and congruencies”
towards better and broader understandings of
Integrative Science and Two-Eyed Seeing



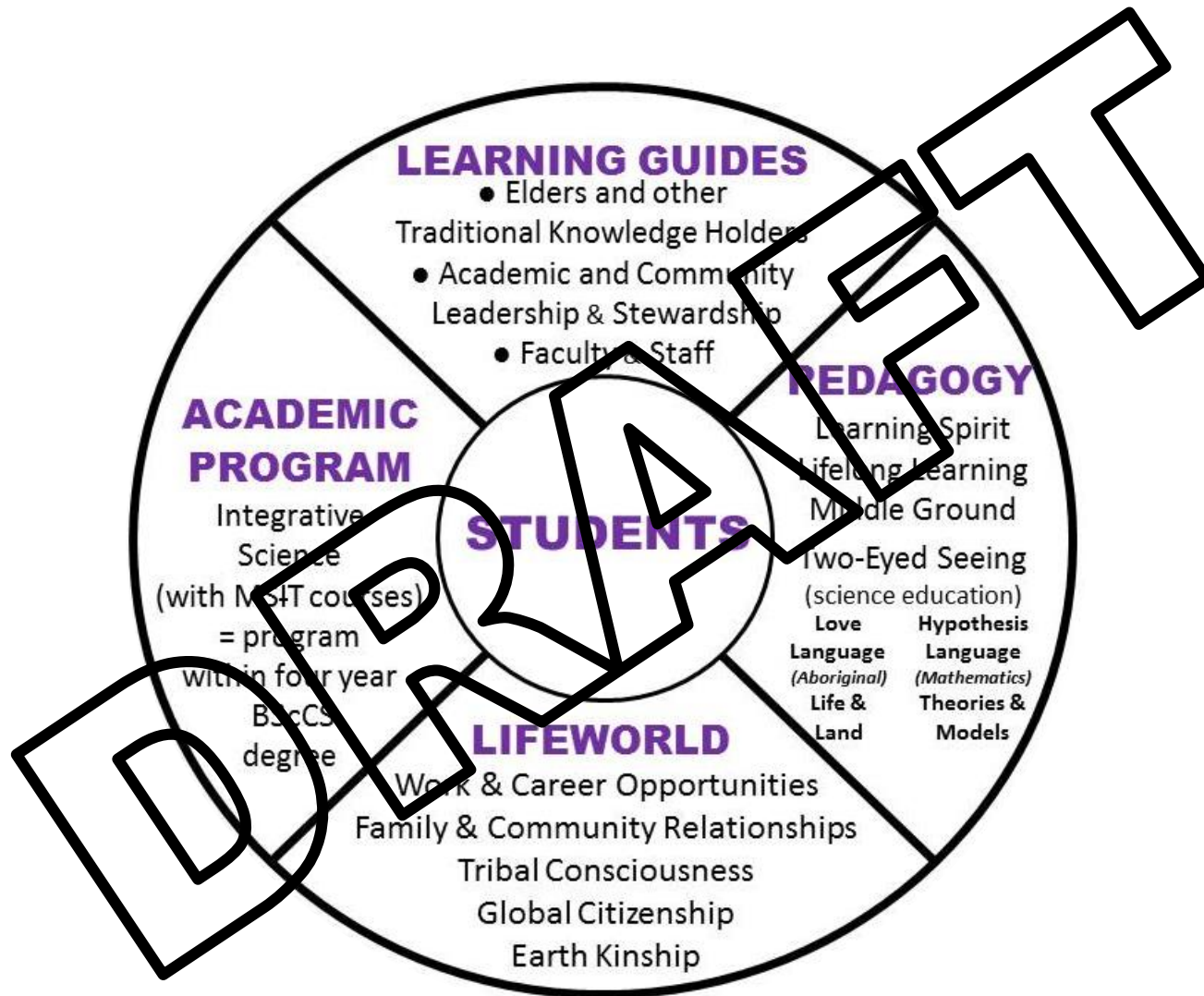
A series of documents has been created to help justify and contextualize efforts and approaches towards revitalizing the Integrative Science academic program, including CBU’s Bachelor of Science Community Studies (BScCS) degree which houses Integrative Science.

The documents in the series rely heavily on the use of images, congruent with the request that Integrative Science encourage learning in a visual way, a request made by Inukman community members when the academic program was conceived in the mid-1990s. The ability to read images and ponder a visual landscape – i.e. to sense patterns, changes, and resonances, and begin to interpret them – is both an Aboriginal traditional skill and a modern science skill ... i.e., an Integrative Science skill. Oral communication – a second skill and one particularly emphasized in Aboriginal traditional ways – can then facilitate the creation of shared meaning. As such, it becomes a desirable, although not absolutely essential, travelling companion for visual learning and visual thinking.



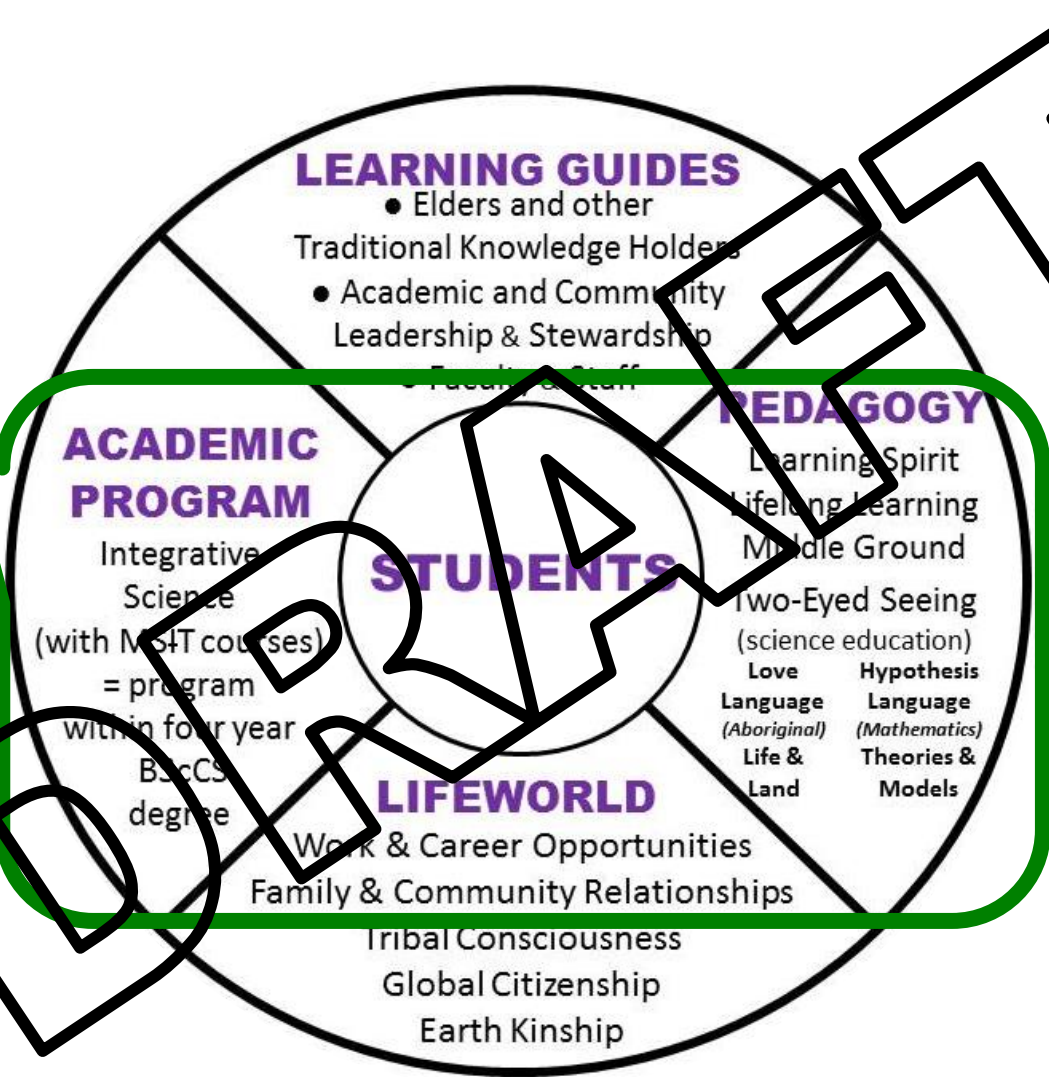
SUMMARY: This document, *“supports required and relationships”*, highlights a report by that name released by the Assembly of First Nations (AFN) in 2012. The AFN report has been chosen because it provides substantial rationale, from the First Nations perspective, for the overall pedagogical, philosophical, and developmental approaches in Integrative Science. This document looks at two particular sections in the AFN report, drawing attention to specific insights and recommendations that Aboriginal communities and organizations are making with respect to supporting Aboriginal learners in PSE (post-secondary education). The first section from the AFN report emphasizes holistic approaches and outlines elements of best practices, indicating that integrating the strengths in Indigenous and Western knowledges (i.e., Integrative Science guided by Two-Eyed Seeing) is an adaptive process and an element of great significance. It concludes by declaring that the “will” to support learners and to develop greater understandings of issues are key. Of additional and particular relevance for Integrative Science is the fact that this first section in the AFN report also highlights the First Nations Holistic Lifelong Learning Model created in 2007 by the Aboriginal Learning Knowledge Centre (AbLKC) within the Canadian Council on Learning (CCL). That model, which is metaphorically based on a living tree, has long been used to help explain Integrative Science to diverse audiences across Canada. The (model’s) tree’s heartwood features Indigenous and Western knowledge side-by-side, as per the vision for Integrative Science (from 1997) and as guided by Two-Eyed Seeing (since 2004); this document notes that Integrative Science was nationally recognized and celebrated by CCL in 2008 as an effective learning practice for Aboriginal learning. The second section (as explored herein) from the AFN report brings forward two visual models that specifically address First Nations success in education, indicating interconnectiveness as key. The second section concludes in pointing to the importance of education as originating in and tied to community – which revitalization of the BScCS degree will strive to do. The four areas where extra-curricular support is required are then outlined, namely re learners, recruitment, community stewardship, and faculty. The document concludes with the Atlantic Elders’ recommendations for Traditional Knowledge from the APCFNC Elders Project.

Supporting First Nations Learners Transitioning to Post-Secondary



Supporting First Nations Learners Transitioning to Post-Secondary

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in this
document



Supporting First Nations Learners Transitioning to Post-Secondary*

a synoptic look at two major sections within an AFN 2012 report *

Outline



AFN 2012 Report: Table of Contents – two major sections for consideration

#1 Building a Solid Foundation to Support First Nations Learners

- CCL First Nations Holistic Lifelong Learning Model: visual explanation
 - ❖ Integrative Science & Two-Eyed Seeing: positioning and congruency with CCL
- Commonalities and shared priorities across FN communities
- Key elements for student support: 3 CCL community dialogues & HRSDC
- Program expansions: research by Malatest (2010)
- Conclusion for #1

#2 Foundational Approaches to Support First Nations Transitioning to Higher Education

- ONECA concept: interrelated and recurring themes
- IEIC concept: continuous and interconnected relations
 - ❖ Integrative Science & Two-Eyed Seeing: congruency with ONECA & IEIC
- Conclusion for #2

*<http://www.afn.ca/uploads/files/education2/postsecondarytransitionsreport.pdf>

Supporting First Nations Learners Transitioning to Post-Secondary*

a synoptic look at two major sections within an AFN 2012 report *

Assembly of First Nations
Education, Jurisdiction, and Governance



Supporting First Nations Learners
Transitioning to Post-Secondary

Final Report
March 31, 2012

#1

#2

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* <http://www.afn.ca/uploads/files/education2/postsecondarytransitionsreport.pdf>

Supporting First Nations Learners Transitioning to Post-Secondary*

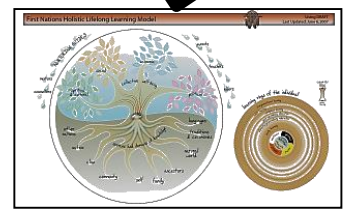
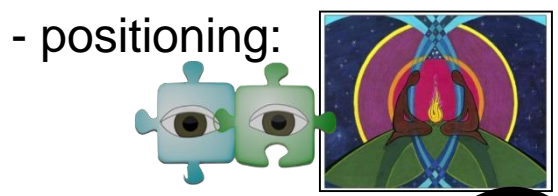
a synoptic look at two major sections within an AFN 2012 report *

- providing positioning and congruency context for Integrative Science & Two-Eyed Seeing -



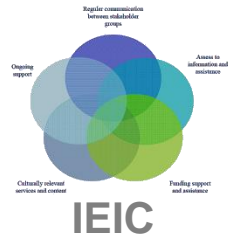
Building a Solid Foundation to Support First Nations Learners

- consideration of CCL model: **First Nations Holistic Lifelong Learning Model**



Foundational Approaches to Support First Nations Transitioning to Higher Education

- consideration of two concepts:



* <http://www.afn.ca/uploads/files/education2/postsecondarytransitionsreport.pdf>



#1

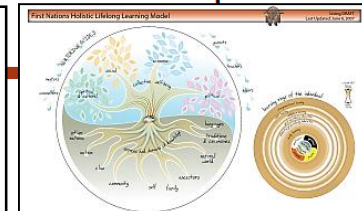
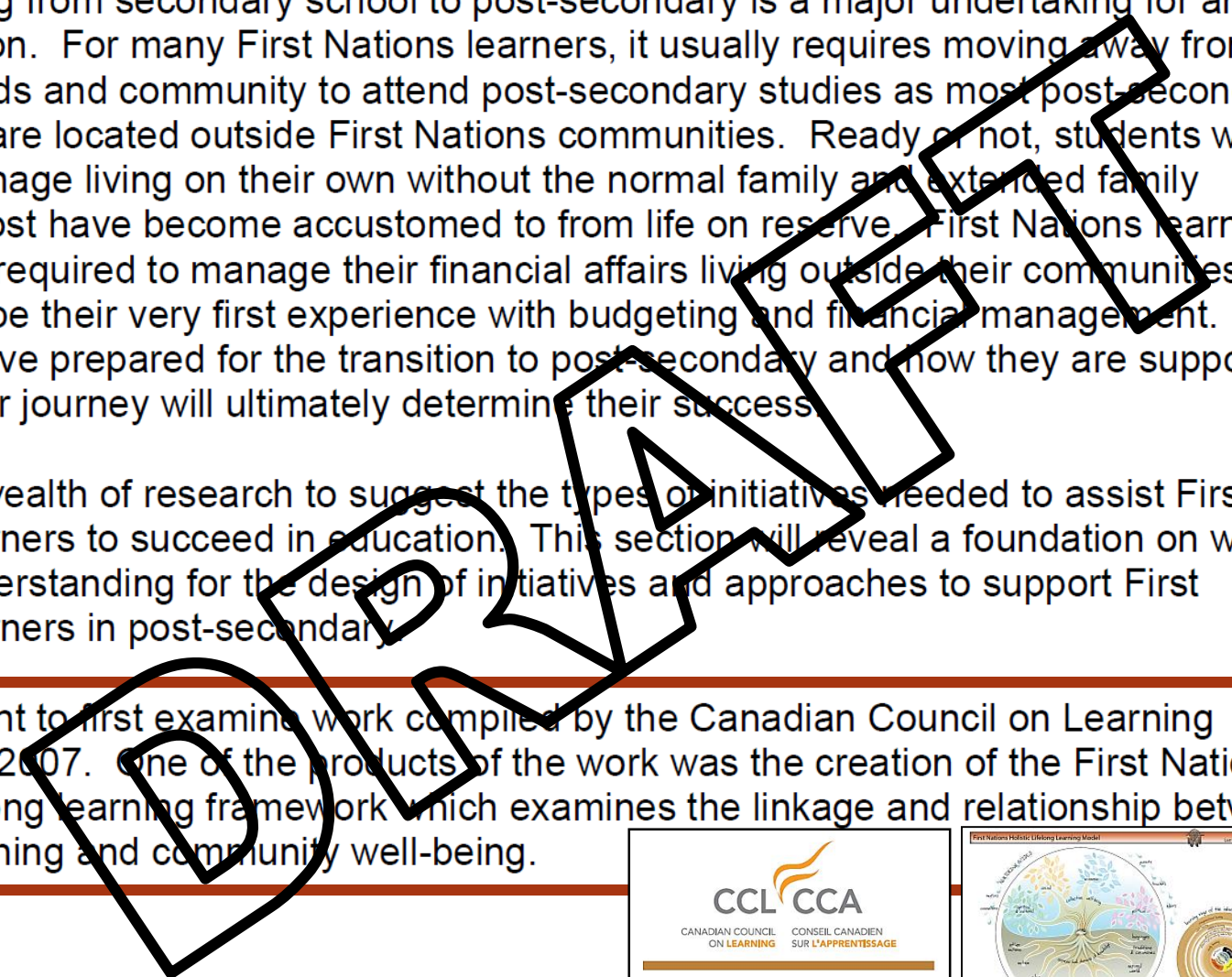
Building a Solid Foundation to Support First Nations Learners

INTRODUCTION with focus on FN Lifelong Learning Model

Transitioning from secondary school to post-secondary is a major undertaking for any young person. For many First Nations learners, it usually requires moving away from family, friends and community to attend post-secondary studies as most post-secondary institutions are located outside First Nations communities. Ready or not, students will need to manage living on their own without the normal family and extended family supports most have become accustomed to from life on reserve. First Nations learners will also be required to manage their financial affairs living outside their communities which may be their very first experience with budgeting and financial management. How well they have prepared for the transition to post-secondary and how they are supported through their journey will ultimately determine their success.

There is a wealth of research to suggest the types of initiatives needed to assist First Nations learners to succeed in education. This section will reveal a foundation on which to build understanding for the design of initiatives and approaches to support First Nations learners in post-secondary.

It is important to first examine work compiled by the Canadian Council on Learning (CCL) from 2007. One of the products of the work was the creation of the First Nations holistic lifelong learning framework which examines the linkage and relationship between lifelong learning and community well-being.





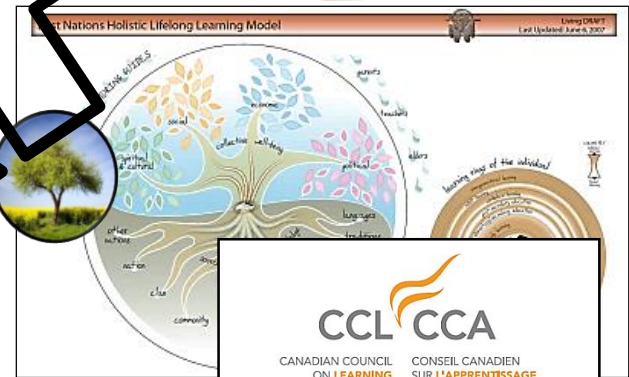
ABOUT THE FIRST NATIONS HOLISTIC LIFELONG LEARNING MODEL

The *First Nations Holistic Lifelong Learning Model* represents the link between First Nations lifelong learning and community well-being, and can be used as a framework for measuring success in lifelong learning.

The *First Nations Holistic Lifelong Learning Model* is a result of ongoing discussions among First Nations learning professionals, community practitioners, researchers and analysts. For a complete list of individuals and organizations that have contributed to the development of this learning model, visit www.ccl-cca.ca.

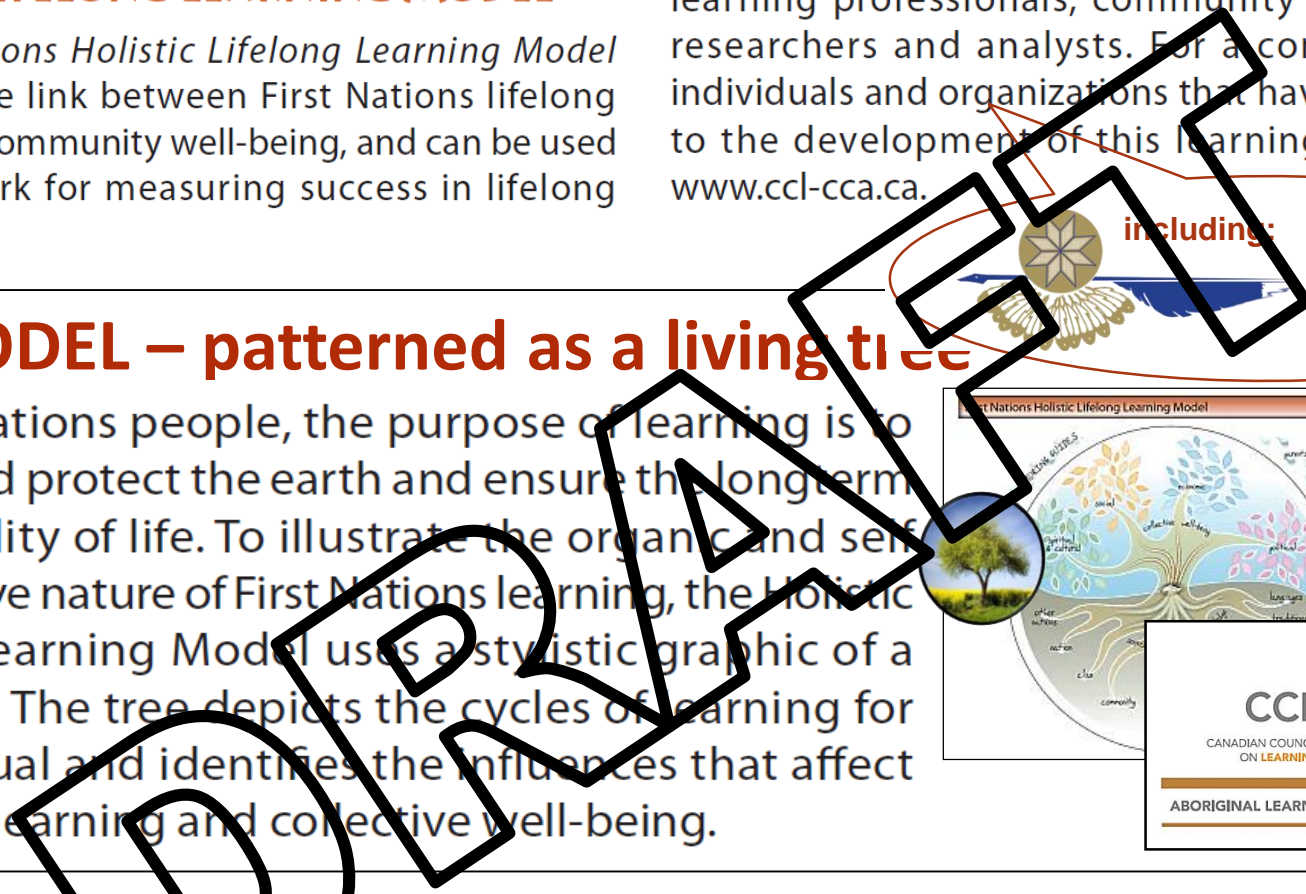
THE MODEL – patterned as a living tree

For First Nations people, the purpose of learning is to honour and protect the earth and ensure the long-term sustainability of life. To illustrate the organic and self-regenerative nature of First Nations learning, the Holistic Lifelong Learning Model uses a stylistic graphic of a living tree. The tree depicts the cycles of learning for an individual and identifies the influences that affect individual learning and collective well-being.



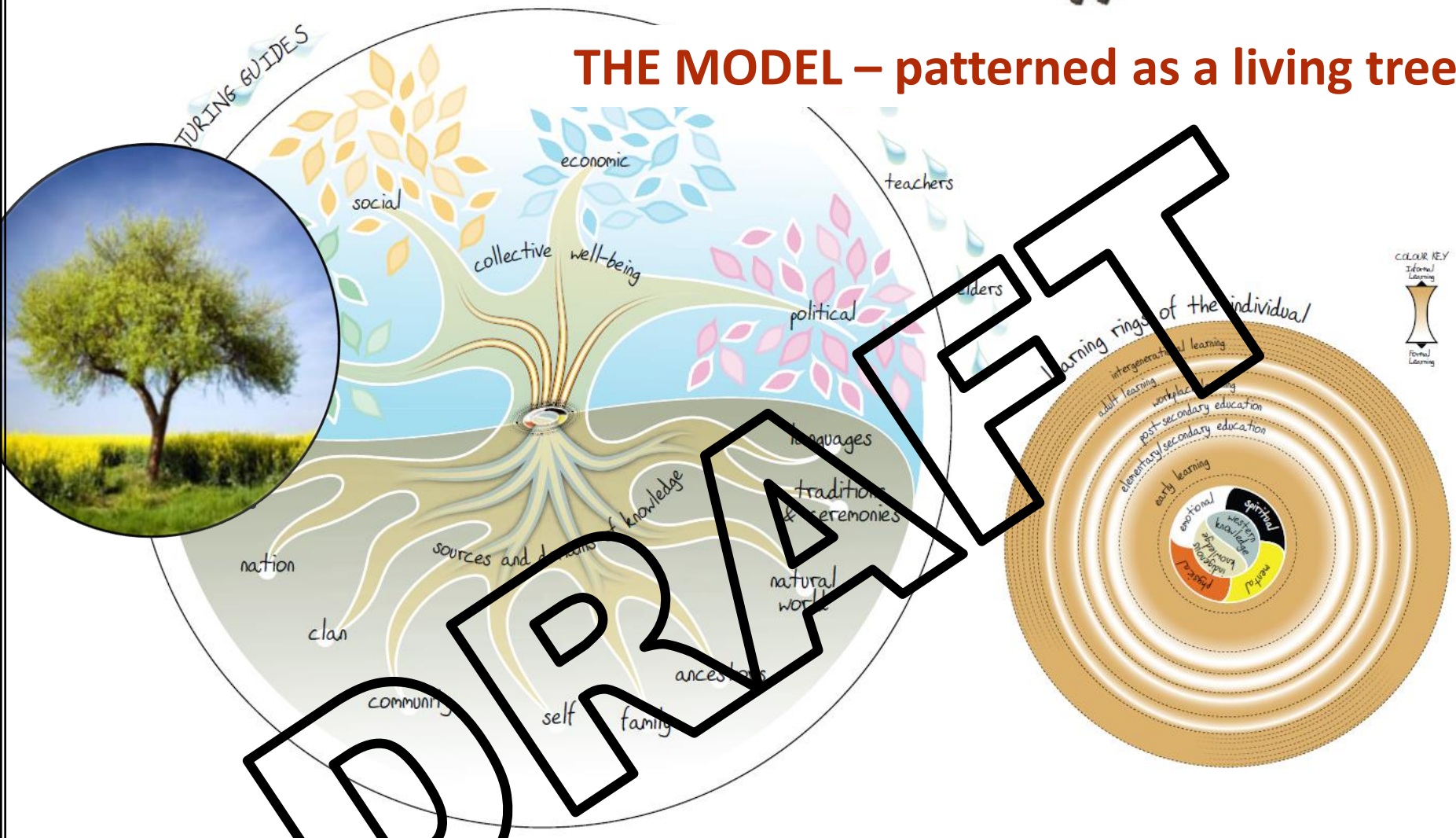
from: Aboriginal Learning Knowledge Centre – Canadian Council on Learning

<http://www.ccl-cca.ca/ccl/Reports/RedefiningSuccessInAboriginalLearning/RedefiningSuccessModelsFirstNations.html>





THE MODEL – patterned as a living tree

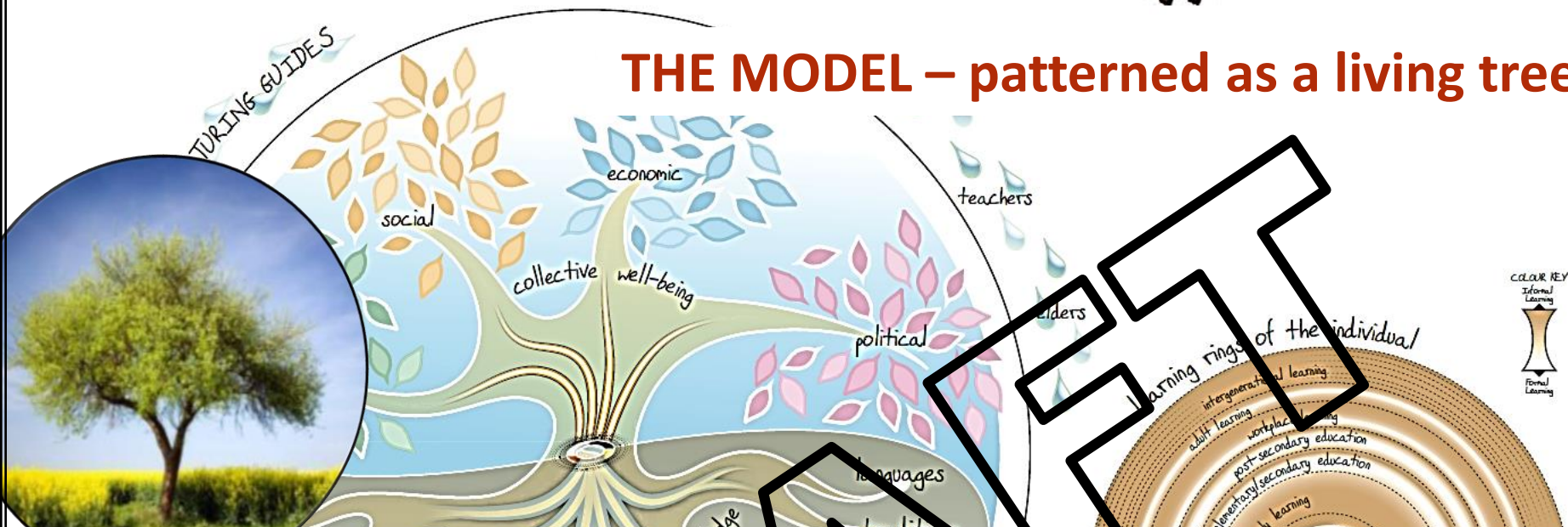


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THE MODEL – patterned as a living tree



DESCRIBING THE MODEL

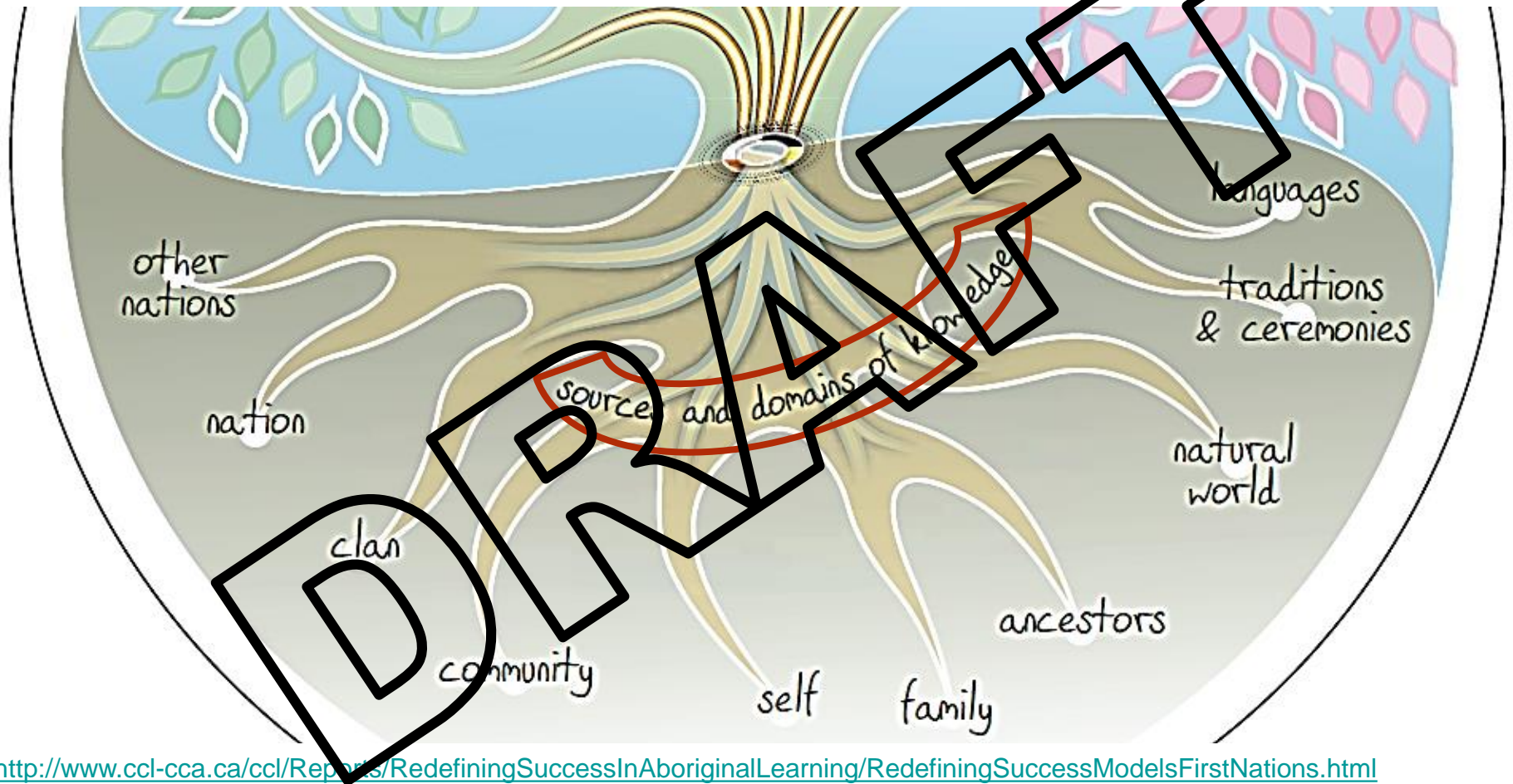
The First Nations learner dwells in a world of continual re-formation, where interactive cycles, rather than disconnected events, occur. In this world, nothing is simply a cause or an effect, but the expression of the interconnectedness of life. These relationships are circular, rather than linear, holistic, and cumulative rather than compartmentalized. The mode of learning for First Nations people reflects and honours this understanding.



ROOTS

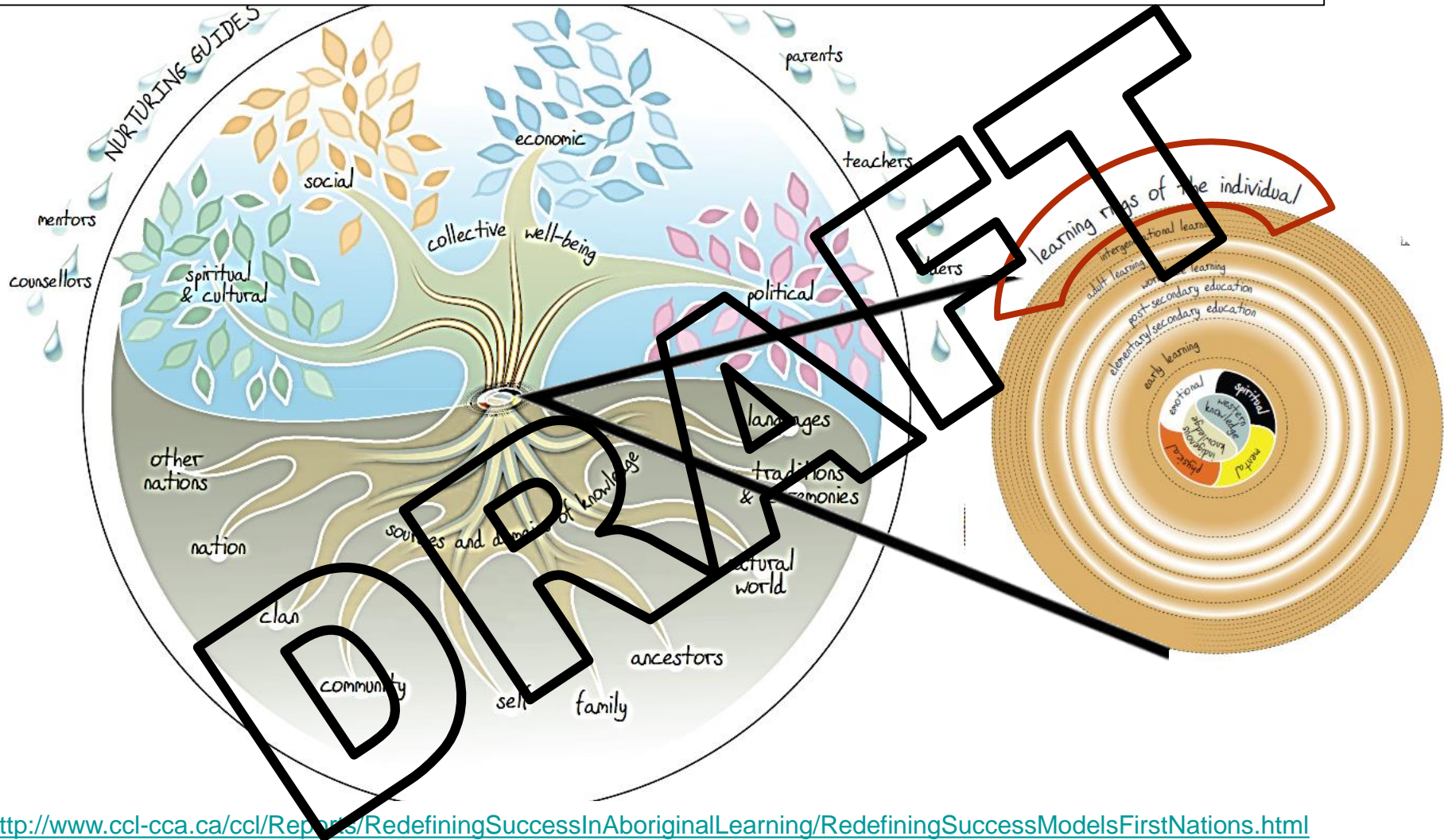
Lifelong learning for First Nations peoples is grounded in experiences that embrace both indigenous and Western knowledge traditions, as depicted in the tree's root system, "Sources and Domains of Knowledge". Just as the tree draws nourishment through its roots, the First Nations person learns from and through the natural

world, language, traditions and ceremonies, and the world of people (self, family, ancestors, clan, community, nation and other nations). Any uneven root growth can de-stabilize the learning system. The root system also depicts the intertwining presence of indigenous and Western knowledge, which forms the tree trunk's core, where learning develops.



TRUNK RINGS - different life stages – Learning Rings

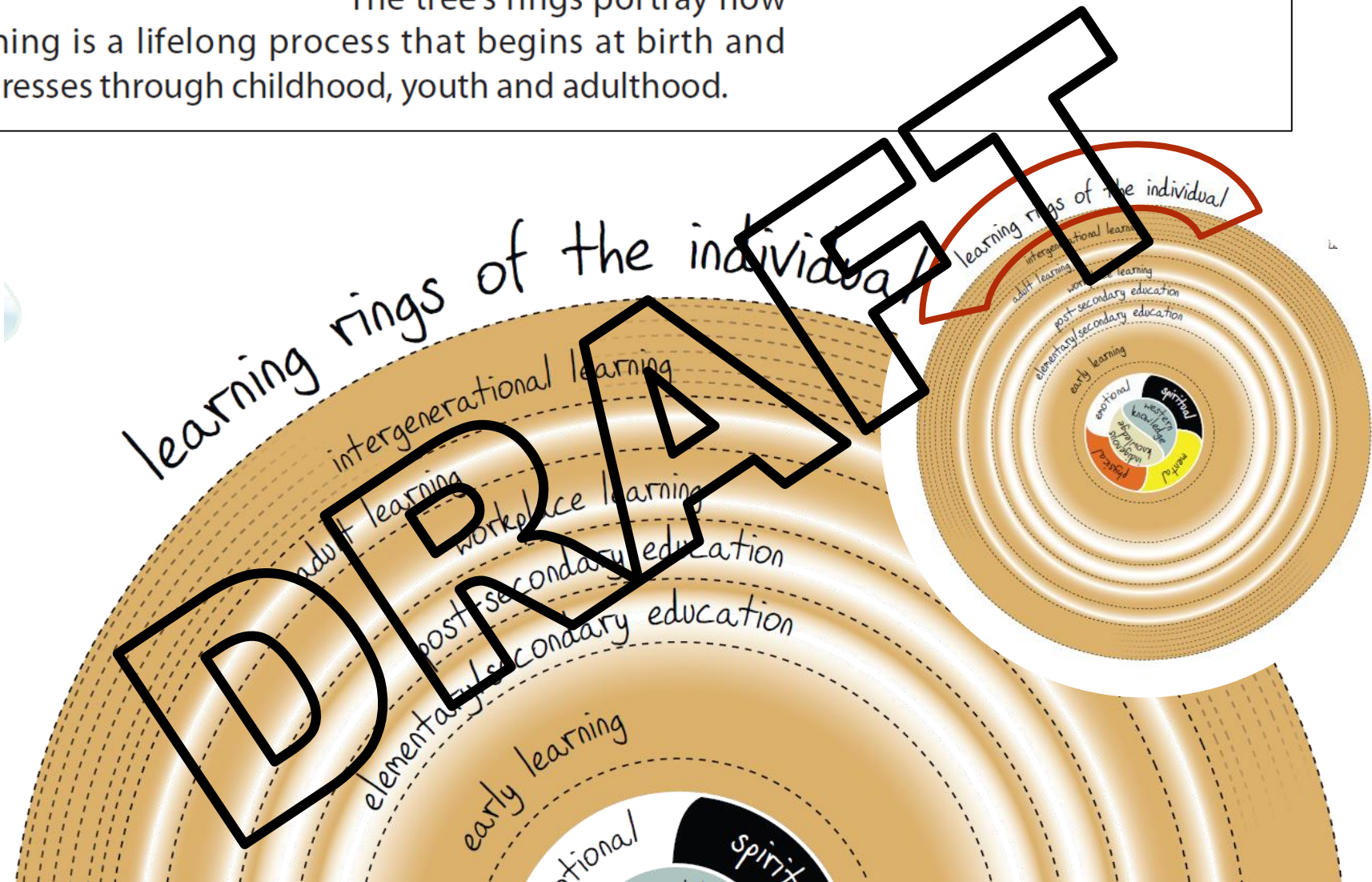
A cross-sectional view of the trunk reveals the "Learning Rings of the Individual".



TRUNK RINGS - different life stages – Learning Rings

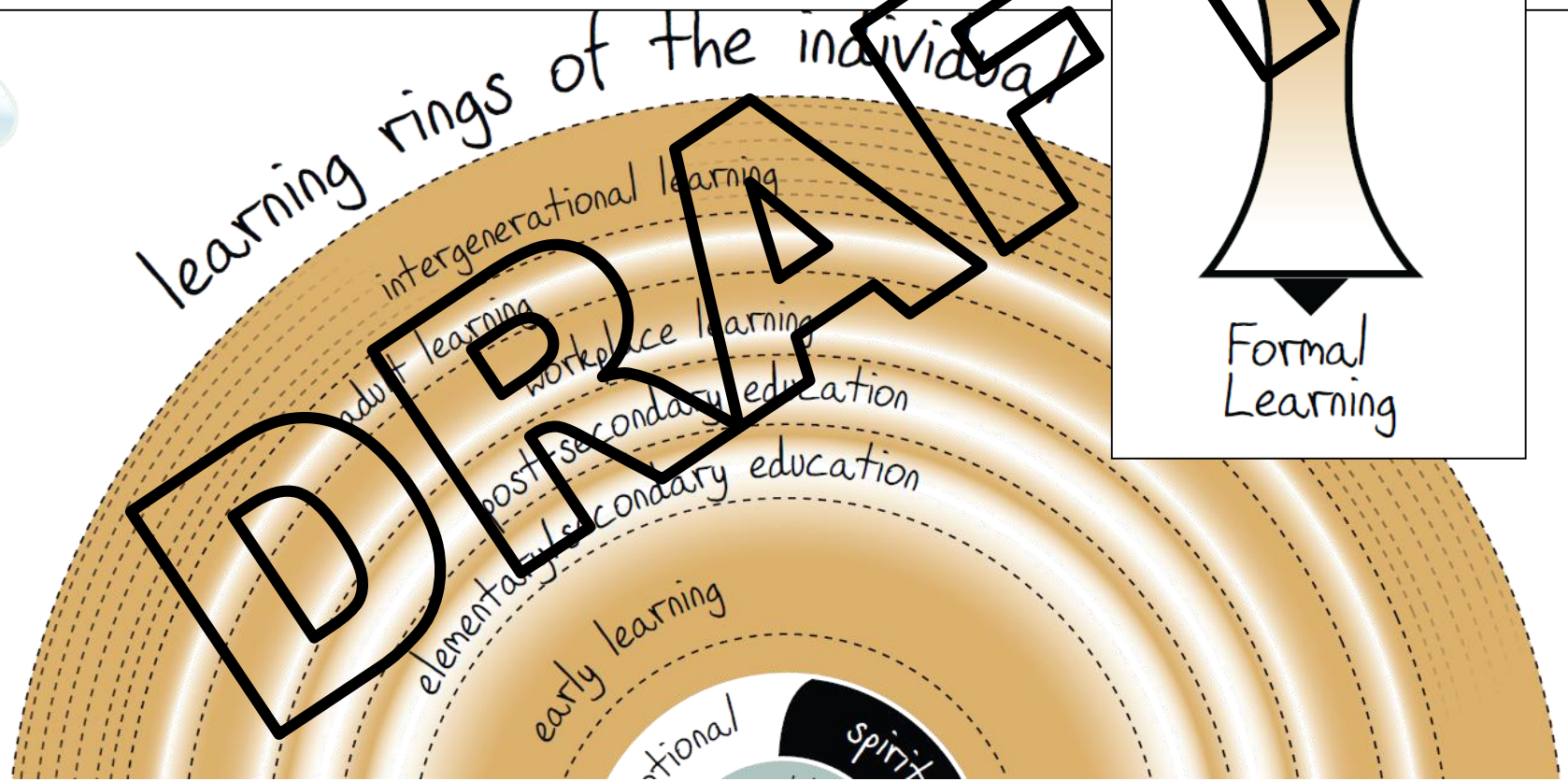
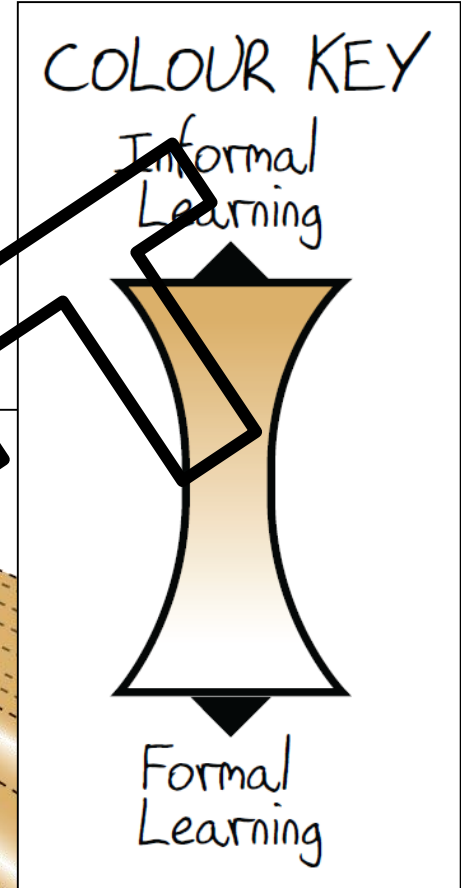
A cross-sectional view of the trunk reveals the “Learning Rings of the Individual”.

The tree’s rings portray how learning is a lifelong process that begins at birth and progresses through childhood, youth and adulthood.



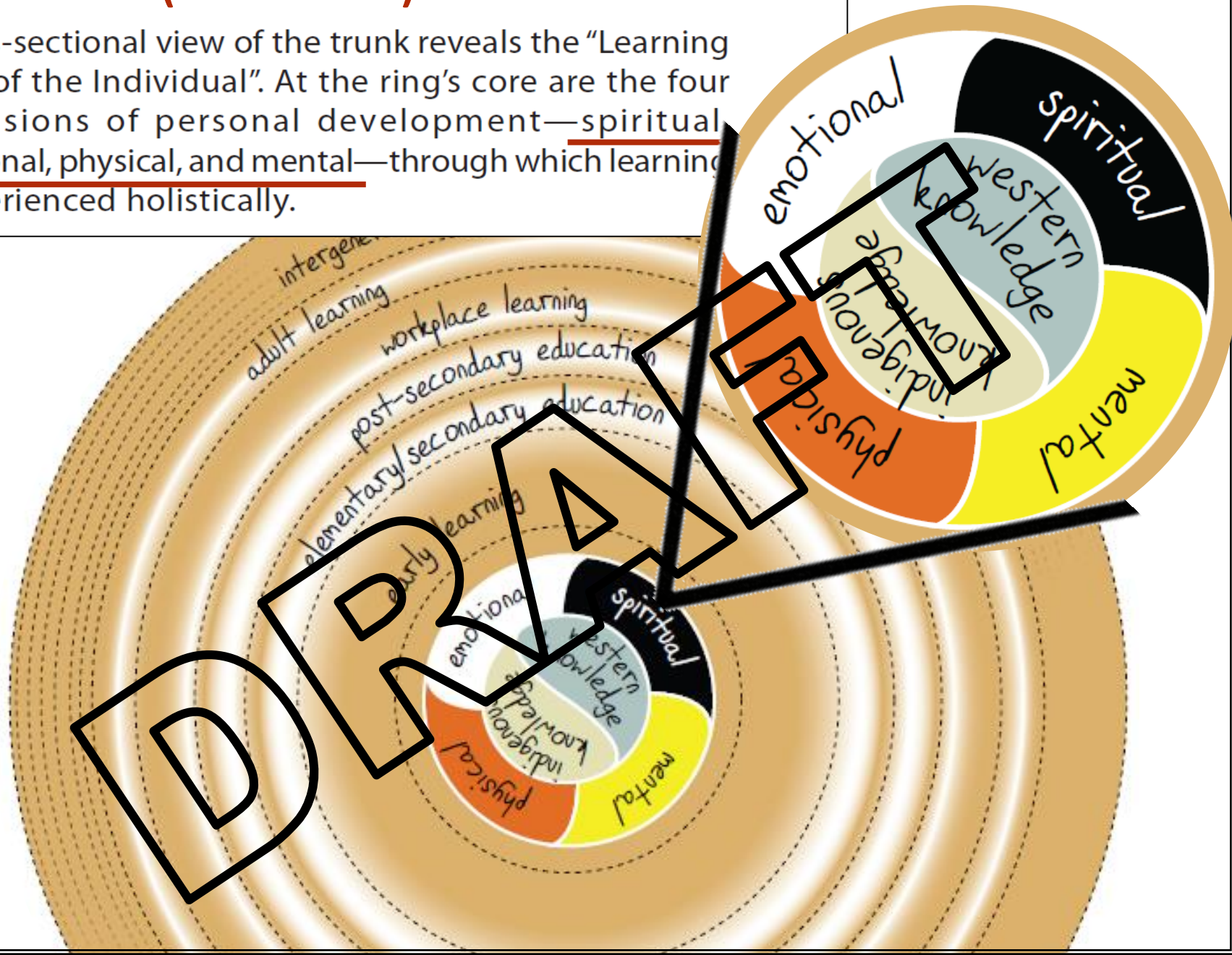
TRUNK RINGS - different life stages – Learning Opportunities

Learning opportunities are available in all stages of First Nations life. They can occur in both informal and formal settings such as in the home, on the land, or in the school. The stages of learning begin with the early childhood phase and progress through elementary, secondary and post-secondary education, to adult skills training and employment. Intergenerational knowledge is transmitted to the individual from the sources within the roots.



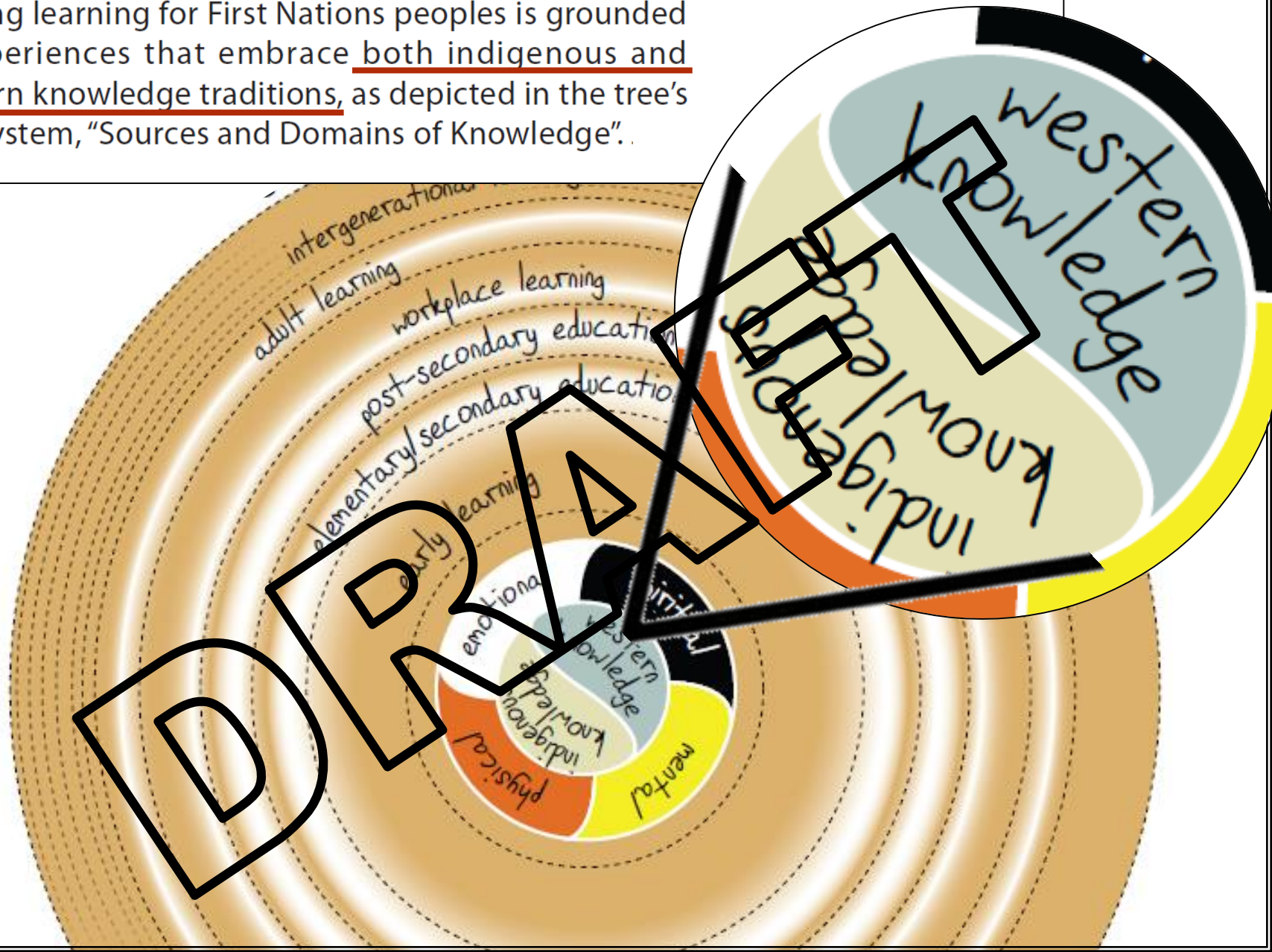
TRUNK CORE (Heartwood) – Four Dimensions

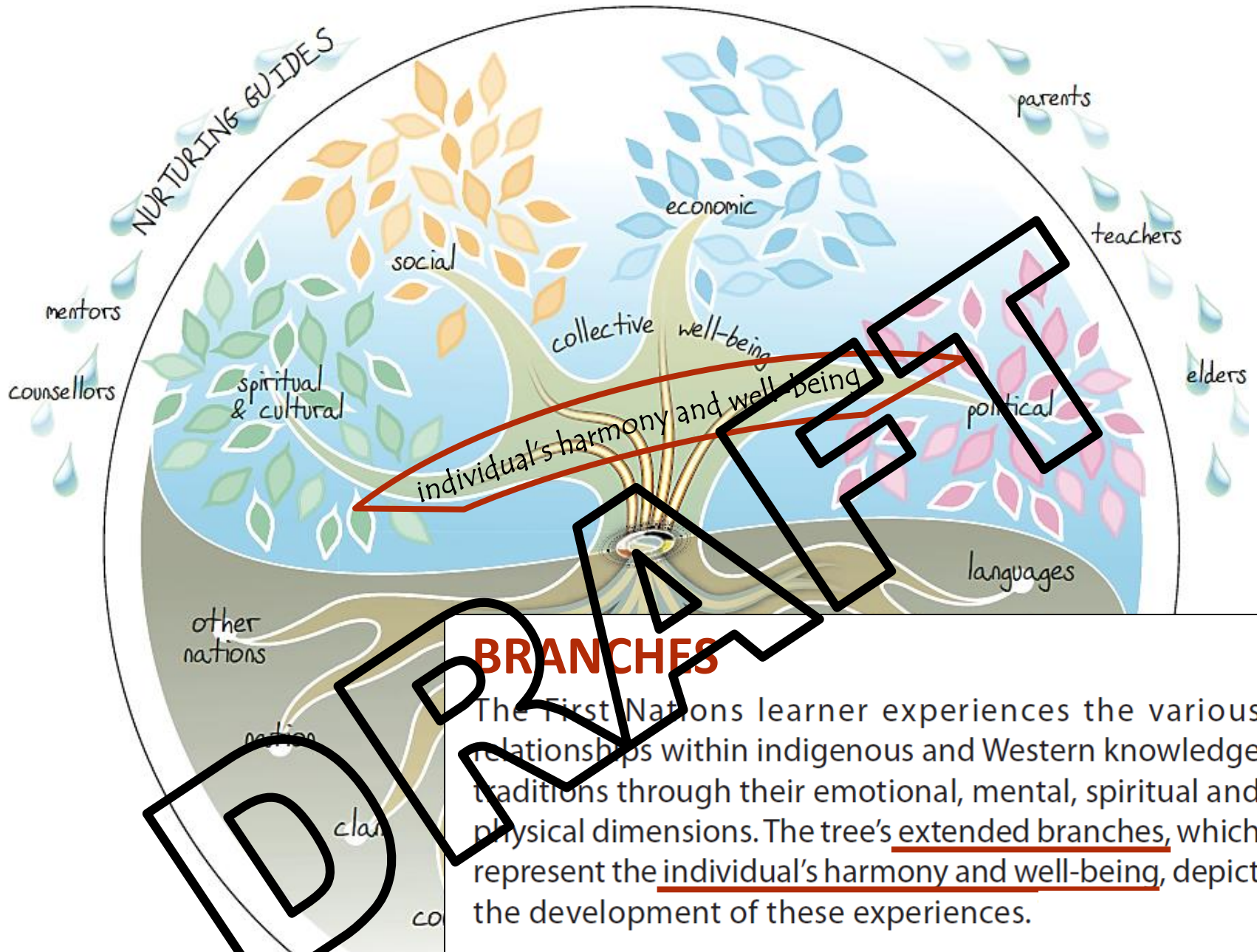
A cross-sectional view of the trunk reveals the “Learning Rings of the Individual”. At the ring’s core are the four dimensions of personal development—spiritual, emotional, physical, and mental—through which learning is experienced holistically.

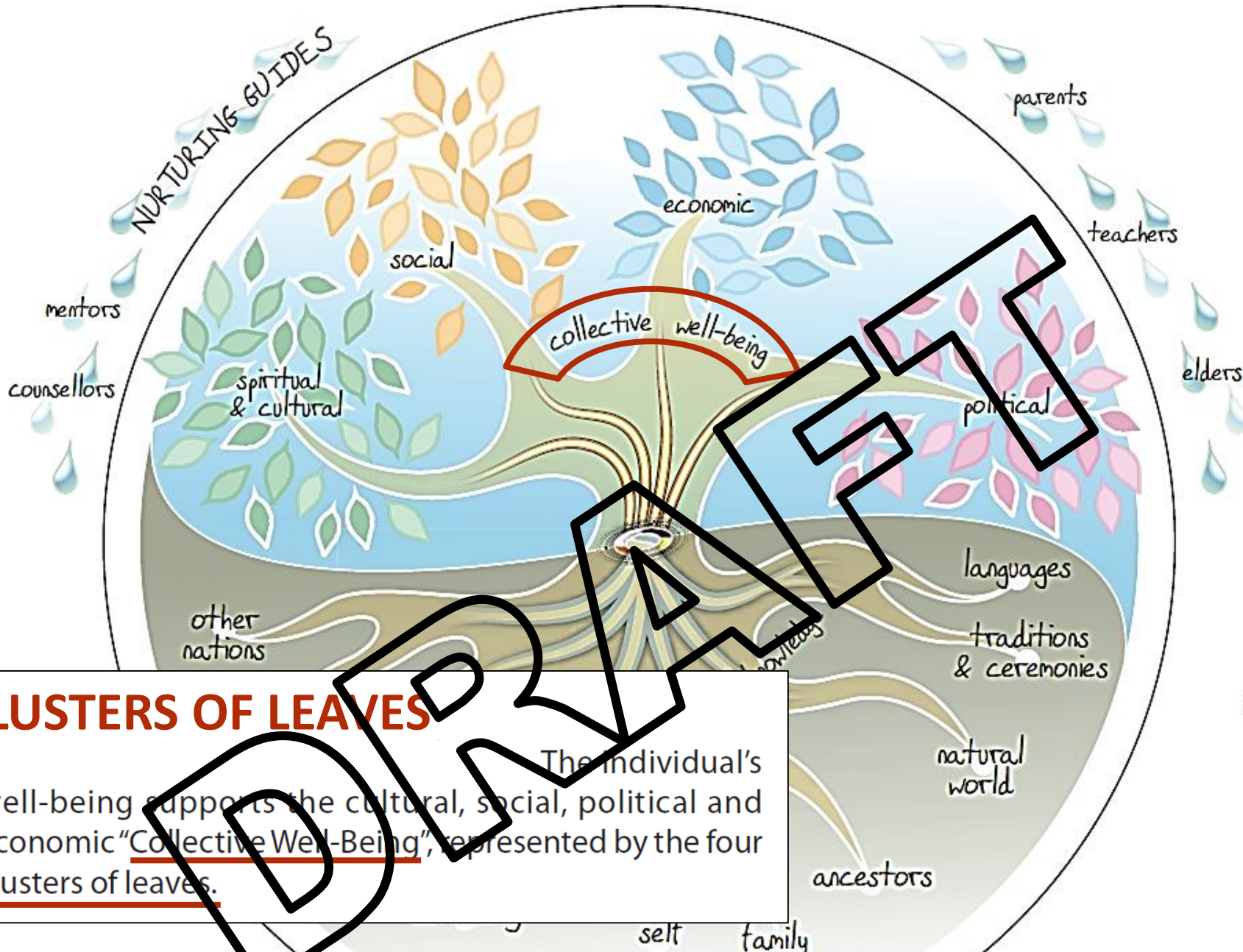


TRUNK CORE (Heartwood) – Two Knowledge Traditions

Lifelong learning for First Nations peoples is grounded in experiences that embrace both indigenous and Western knowledge traditions, as depicted in the tree's root system, "Sources and Domains of Knowledge".

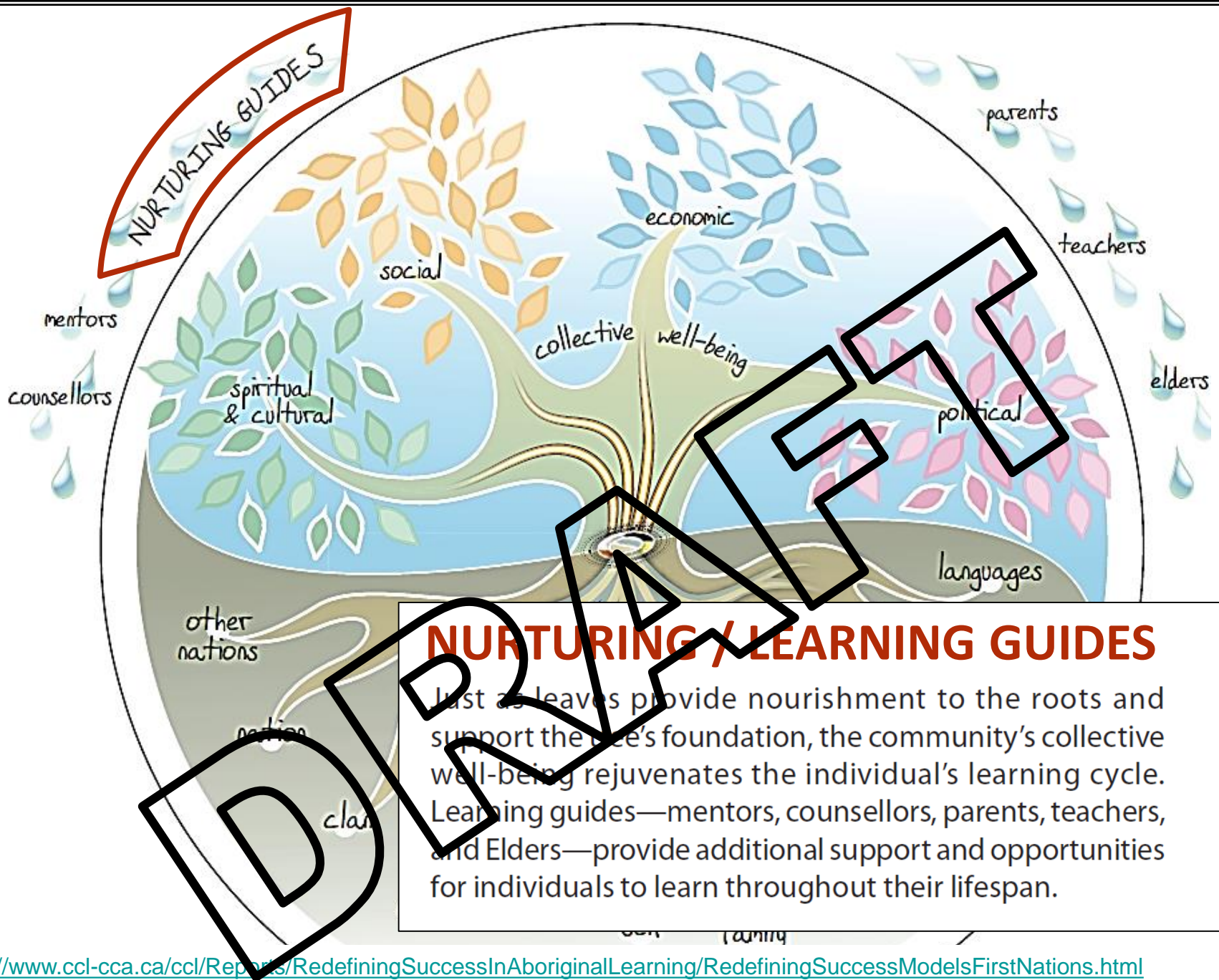


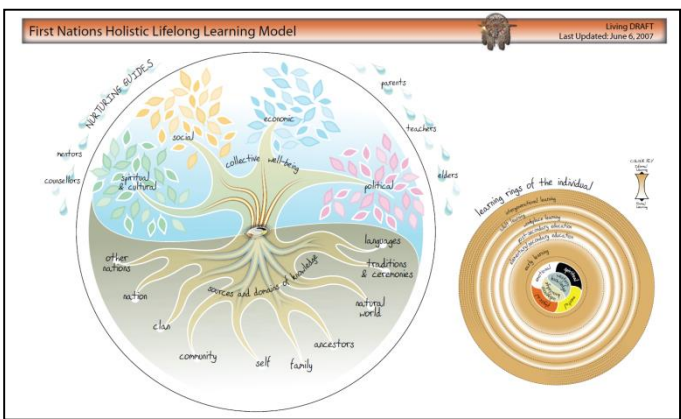




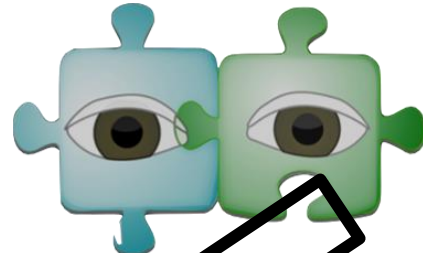
CLUSTERS OF LEAVES

The individual's well-being supports the cultural, social, political and economic "Collective Well-Being", represented by the four clusters of leaves.





Two-Eyed Seeing



Integrative Science



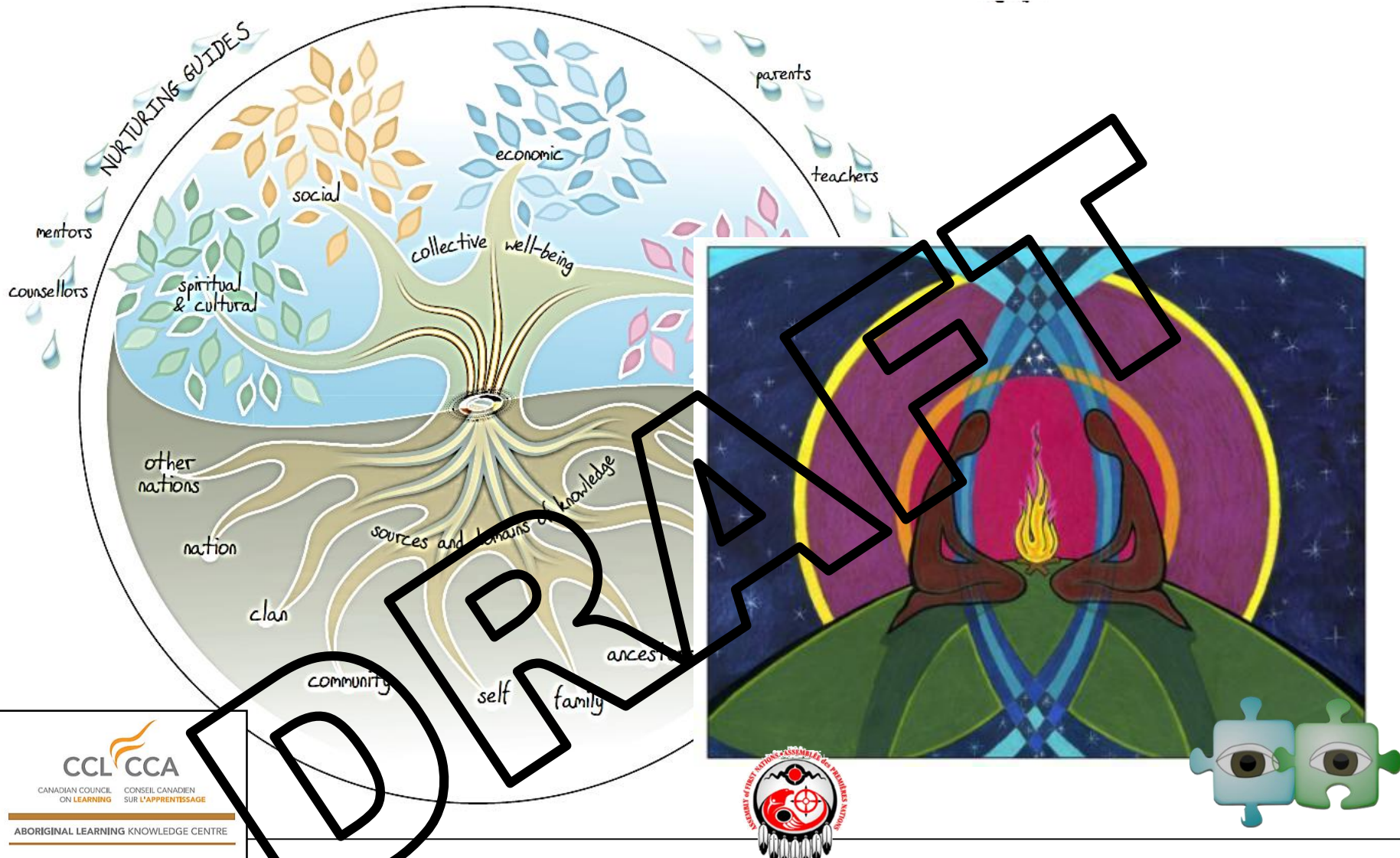
Indigenous Western



major section #1 in AFN 2012 report with CCL Model

- providing positioning and congruency contexts for Integrative Science & Two-Eyed Seeing -

Integrative Science & Two-Eyed Seeing: positioning and congruency with CCL



major section #1 in AFN 2012 report with CCL Model

- providing positioning and congruency contexts for Integrative Science & Two-Eyed Seeing -



sharingtheflame
recognizing excellence in learning

passezleflambeau
promouvoir l'excellence en apprentissage

Aboriginal Learning

Master of Education: Leadership in Learning (Nursing)	5
Mi'kmaq Studies / Integrative Science Program	6
The Native Language Instructors' Program (NLIP)	7
Uniting Our Nations: Relationship-based Programming for First Nations and Métis Youth	8

Mi'kmaq Studies/ Integrative Science Program

Overview

The vision of the *Toqwa'tu'kl Kijjitaqnnl* Integrative Science Program is to bring together modern Western sciences and the Mi'kmaq conceptual world view. Given the label "MSIT" (a Mi'kmaq word meaning everything together), courses taught at Cape Breton University emphasize relationships within nature, and value the profound knowledge of such things as they are reflected in Mi'kmaq stories and legends. Course content is approximately 80-85% Western/mainstream

Innovation

Integrative science courses include:

- Sense of Place, Emergence and Participation: the exploration of human consciousness including its brain-basis as understood in modern neuro and cognitive science, as well as the traditional world views of Aboriginal people
- Ways of Knowing: the exploration of ways of knowing about and living within nature, including Traditional Ecological Knowledge (TEK) and modern ecosystem stewardship

Celebrating Effective Learning Practices

2008 Program Descriptions

CANADIAN COUNCIL ON LEARNING CCL CCA CONSEIL CANADIEN SUR L'APPRENTISSAGE

1410-50 O'Connor, Ottawa ON Canada K1P 6L2 | T: 613.782.2900 | F: 613.782.2906
www.ccl-cca.ca



Integrative Science conferred national award of recognition by CCL in 2008

http://www.ccl-cca.ca/pdfs/SharingFlame/SharingTheFlame2009_EN_11dec.pdf

Objectives

- address the low participation rate by Mi'kmaq students in the post-secondary sciences and science-related programs
- address the lack of acknowledgement by the mainstream science community of



...ent is ...stream ...nce.

- Cycles and Holism: human understandings of cycles, rhythms and transformations in nature, including western science and Aboriginal conceptual world views
- Wholeness: human understandings of wholeness and change in nature by exploring the topics of health, disease and



Supporting First Nations Learners Transitioning to Post-Secondary

#1 Building a Solid Foundation to Support First Nations Learners (cont'd)

The creation of the First Nations holistic lifelong learning framework was followed by three community dialogues hosted jointly by the CCL and the Assembly of First Nations. The purpose of the community dialogues was to test how the First Nations holistic lifelong learning framework could be used to help address learner needs. The communities selected for the dialogues included Whitehorse, Yukon, Onion Lake, Saskatchewan and Nipissing, Ontario. Given the geographic and culturally/linguistic differences of the participating communities, the findings revealed strong commonalities and shared priorities across the communities. They were:

(pages 20-21)

1. To live in safe, healthy communities - living in balance (physical, mental, emotional and spiritual);
2. Increase parental and community involvement by providing opportunities for learning through teaching of traditional values throughout the lifespan; in the home, at school (including Early Learning), on the land and in the community and workplace;
3. Understanding and becoming aware of inter-generational ties through clan/kinship and genealogy;
4. Increase the use and fluency of their languages among learners of all ages and in all areas of community life;
5. Ensuring the active and meaningful engagement of Elders throughout the community, as teachers, decisions makers and role models;
6. Providing more learning spaces to facilitate the transfer of historical, linguistic, cultural and indigenous knowledge;
7. Building trusting relationships through consistent communications with all agencies, organizations and families;
8. Increasing community understanding of the roles and responsibilities of their territorial stewardship, through experiencing the teachings on and from the land;
9. Provide mentoring/employment opportunities for all professions and for all community members, with a focus on the youth.³³

These are all important considerations which provide a foundation for the design, development and implementation of programs and services to assist students throughout the lifelong learning journey.



Strong Commonalities and Shared Priorities across FN Communities

1. To live in safe, healthy communities – living in balance (physical, mental, emotional and spiritual);
2. Increase parental and community involvement by providing opportunities for learning through teaching of traditional values throughout the lifespan; in the home, at school (including Early Learning), on the land and in the community and workplace;
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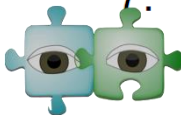


Supporting First Nations Learners Transitioning to Post-Secondary (page 21)

³⁴ HRSDC, *Best Practices in Aboriginal Adult Education*, June 29, 2010, 18

Research commissioned by Human Resources and Skills Development Canada (HRSDC) in 2010 reinforces the findings of the CCL work. Best practices in Aboriginal adult education identified in the research found the following key elements necessary to address the issue of support student:

1. *Holistic*: It engages and develops all aspects of the individual (emotional, physical, spiritual and intellectual) and the community, and stresses the interconnectedness of all life under the Creator.
2. *Lifelong*: It begins before birth and continues through old age and involves the intergenerational transfer of knowledge.
3. *Experiential*: It is connected to live experience and reinforced by traditional ceremonies, meditation, storytelling, observation and imitation.
4. *Rooted in Aboriginal languages and cultures*: It is bound to language, which conveys a community's unique values and worldview while ensuring cultural continuity.
5. *Spiritually oriented*: It possesses a spiritual element which is fundamental to the learner's path to knowledge. This is manifested in spiritual experiences such as ceremonies, vision quests and dreams.
6. *Communal activity*: It is a communal process in which parents, family, Elders and community have a role and responsibility.
7. *Integrates Aboriginal and Western knowledge*: It is an adaptive process that draws from the best of traditional and contemporary knowledge.³⁴





³⁴ HRSDC, *Best Practices in Aboriginal Adult Education*, June 29, 2010, 18

The HRSDC (2010) report also recommends:

Recognizing and facilitating the provision of student support services:

The provision of student support services should be viewed by service providers, funders and policy makers as part of a holistic approach to providing Aboriginal adult education in Canada and should be integrated within each institution and program. Specific funding for those student support services may be required above and beyond standard curriculum delivery costs.

Providing stable, consistent and predictable institution/program funding:

Future policy discussion or debate concerning Aboriginal adult education would benefit from the inclusion of long-term, stable institutional/program funding as an important topic for consideration.



Supporting First Nations Learners Transitioning to Post-Secondary (page 22)

These foundational perspectives offer guidance for policy makers, educational institutions, educators and others in understanding the significant elements important to First Nations peoples. In consideration of the existing supports, research of colleges and universities in Ontario (Malatest, 2010) revealed the need for program expansions such as the following:

- Hiring Aboriginal recruitment officers as well as student risk management officers to better support students. Emphasis was also placed on developing the capacity to support students with disabilities. In addition, stakeholders wanted to maintain consistency in their service delivery by being able to hire staff on a long-term basis.
- Developing or expanding mentorship programs in order to guide Aboriginal students.
- Launching new programs for students during the summer, including an Aboriginal orientation program (to help students prepare for the transition).
- Creating more partnerships with First Nations communities.
- Building an e-meeting room. This would be a place where students could use and learn about technology in a comfortable environment.
- Securing a commitment and long-term funding to build a specialized residence to house Aboriginal students in cities where vacancy rates are low.³⁵

³⁵ Malatest, R. A. Promising Practices: Increasing and Supporting Participation for Aboriginal Students in Ontario, Higher Education Quality Council of Ontario, 36



Supporting First Nations Learners Transitioning to Post-Secondary

#1 CONCLUSION (page 22)

Building a Solid Foundation to Support First Nations Learners

The needs have been documented. Recommended action has been documented. The 'will' to support First Nations learners is necessary. Greater understanding of the issues can lead to the effective design, development and implementation of initiatives to address transitions, access, retention and success of First Nations learners in education.

The primary role of holistic balanced learning systems is to transmit First Nations ancestral languages, traditions, cultures and histories while at the same time preparing and making accessible to the learner the support and tools that will allow them to achieve their full potential in any setting they choose.

Taking Action for First Nations Post-Secondary Education: Access, Opportunity, and Outcomes, 2010

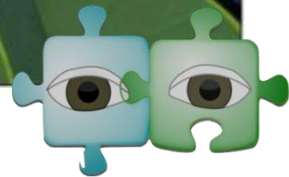
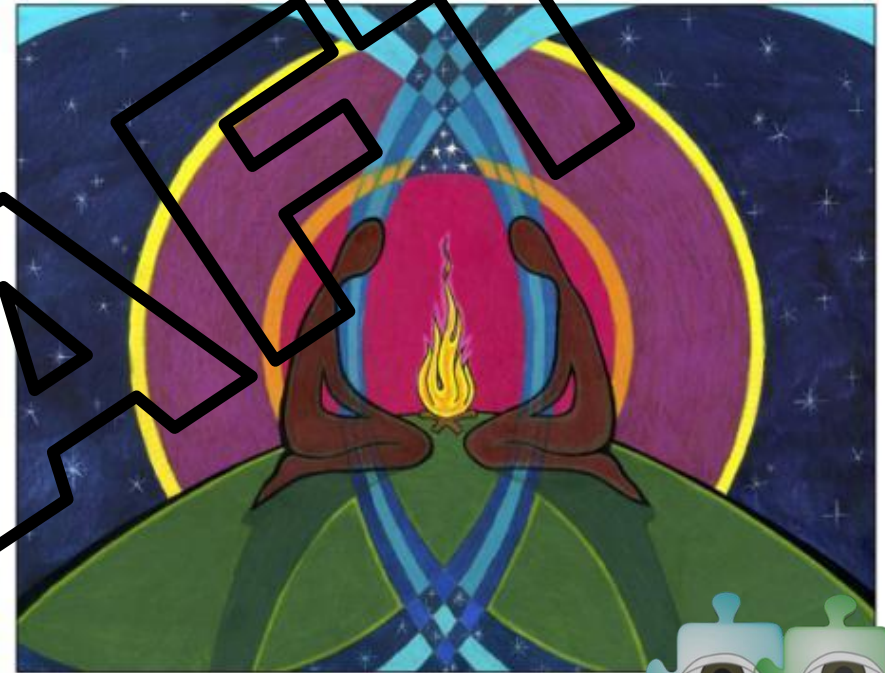
Integrative Science & Two-Eyed Seeing: positioning and congruency

Assembly of First Nations
Education, Jurisdiction, and Governance



Supporting First Nations Learners
Transitioning to Post-Secondary

Final Report
March 31, 2012



DRAFT

major section #1 in AFN 2012 report and CCL Model
- providing positioning and congruency contexts for Integrative Science & Two-Eyed Seeing -



Supporting First Nations Learners Transitioning to Post-Secondary

#2 INTRODUCTION (page 34)

Foundational Approaches to Support First Nations Transitioning to Higher Education

The interconnectedness of First Nations individuals to their families and their communities requires understanding before considering the design and development of supports to assist First Nations learners on their educational journey. This interconnectedness is demonstrated through the work of the Ontario Native Education Counselling Association (ONECA) and in the work of the Indigenous Education Institute of Canada at the University of British Columbia.

ONECA commissioned research to examine the supports needed to assist students with transitions to post-secondary. The research found several interrelated and recurring themes, highlighting the need for regular communication between all stakeholder groups (students, parents, educators, administrators, counsellors and other support staff). The interrelated and recurring themes are illustrated in the following diagram.⁶⁷

on next page

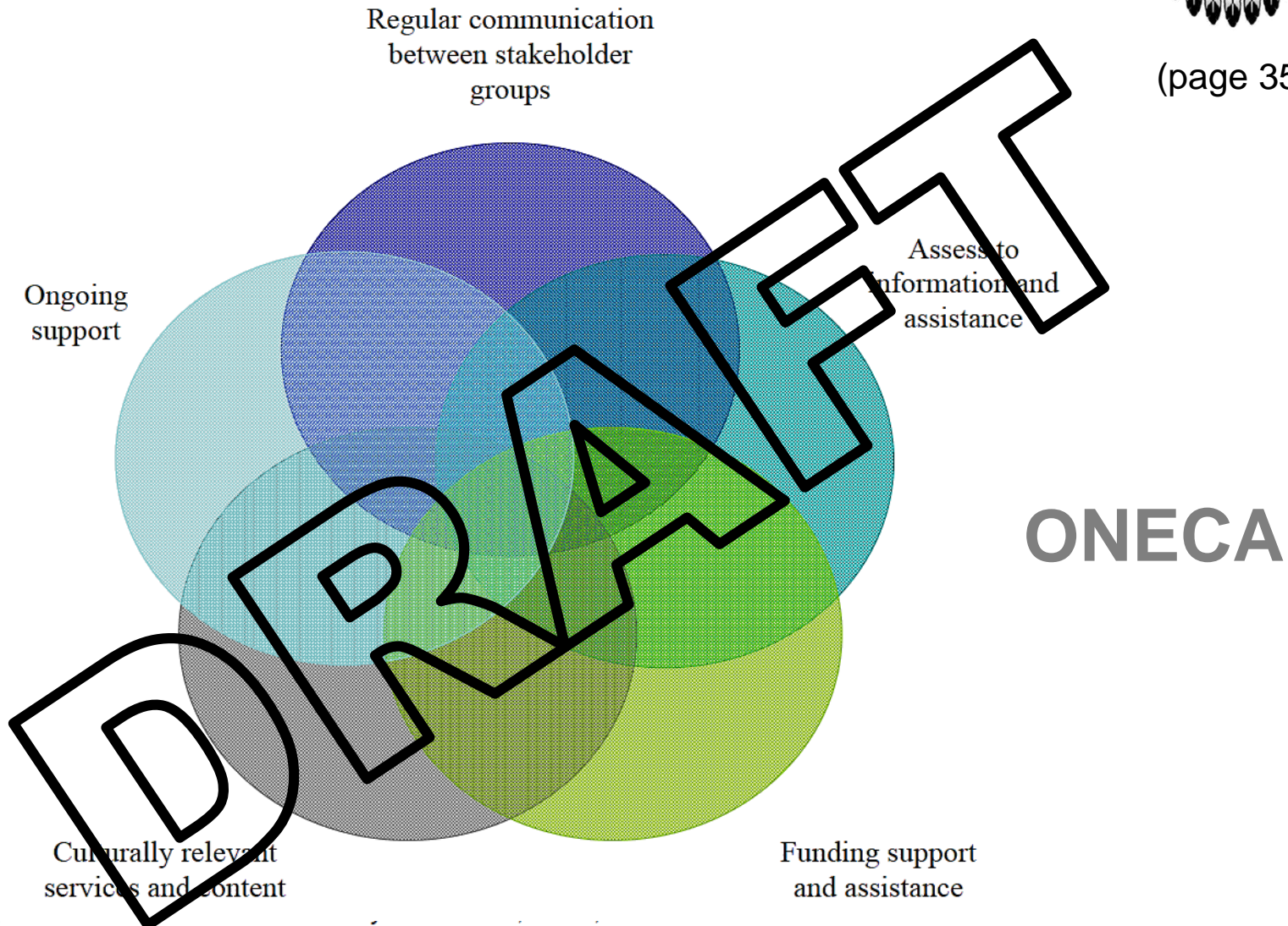
⁶⁷ Hill, *Aboriginal Students Transitions Project*, Ontario Native Education Counselling Association, March 2011, 51

(cont'd from page 34)



(page 35)

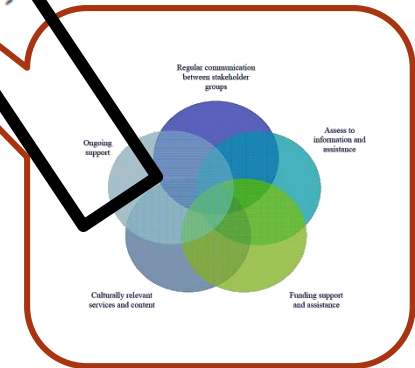
interrelated and recurring themes – work of ONECA





(page 35)

In addition to the recurring themes, ONECA found the need for, “*frequent and continuous monitoring by the support team (teachers, counselors, advisors, faculty, tutor, mentors employers) from the community right through to post-secondary graduation*”⁶⁸ to assist in the retention and graduation of Aboriginal learners in post-secondary. The organization found that it is not enough just to assist First Nations students to ‘access’ post-secondary education. The network of student supports must also continue throughout post-secondary and straight through to graduation.

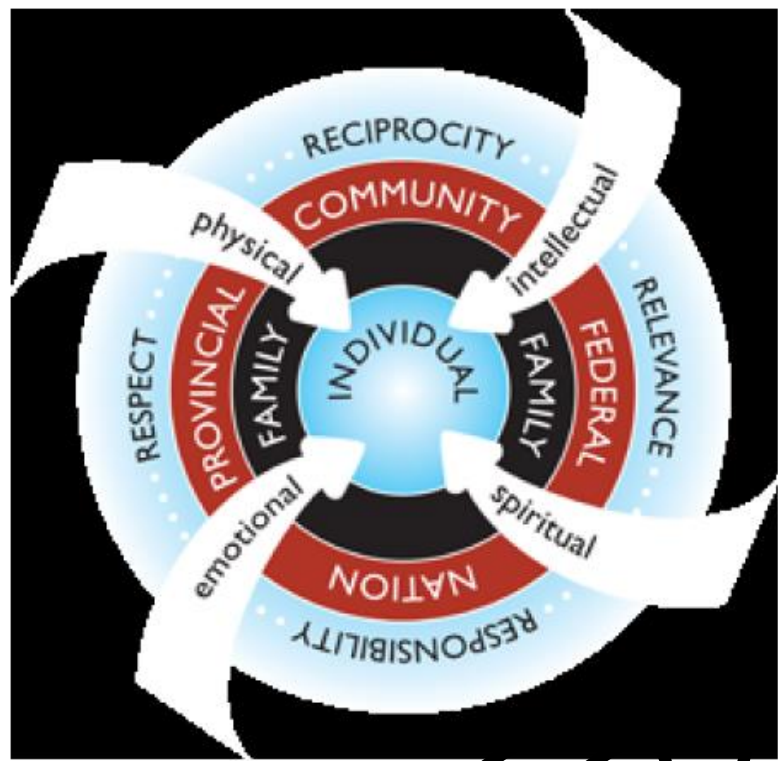


ONECA

⁶⁸ Assembly of First Nations, *Virtual Summit, AFN Survey of First Nation Post-Secondary Students 2011*, 2011



IEIC (Indigenous Education Institute of Canada, UBC)



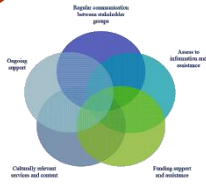
- **4 Dimensions**
physical, intellectual, emotional, spiritual
- **Relations**
individual – family – community – government
- **4 Rs**
respect, reciprocity, relevance, responsibility

(pages 35-36)

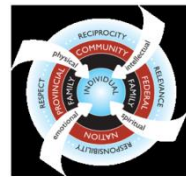
The Indigenous Education Institute of Canada at UBC examined factors affecting decisions of First Nations learners to enroll in graduate studies. This research resulted in the creation of an Indigenous holistic framework which

reinforces the need for a continuous and interconnected approach. The framework illustrates that, *the considerations and relationships found to be necessary to support student transitions to graduate studies. The components of the framework include consideration of the physical, intellectual, emotional and spiritual being, the importance of relations with family, community and governments, as well as the need for respect, reciprocity, relevance and responsibility.*⁶⁹

⁶⁹ University of British Columbia, *Aboriginal Transitions: Undergraduate to Graduate (AT:U2G), Community Report #1, Summary of Phase 1 Research Findings*



ONECA



IEIC

1: *the interrelated and recurring themes emphasizing stakeholder communication, of ONECA (Ontario Native Education Counselling Association)*

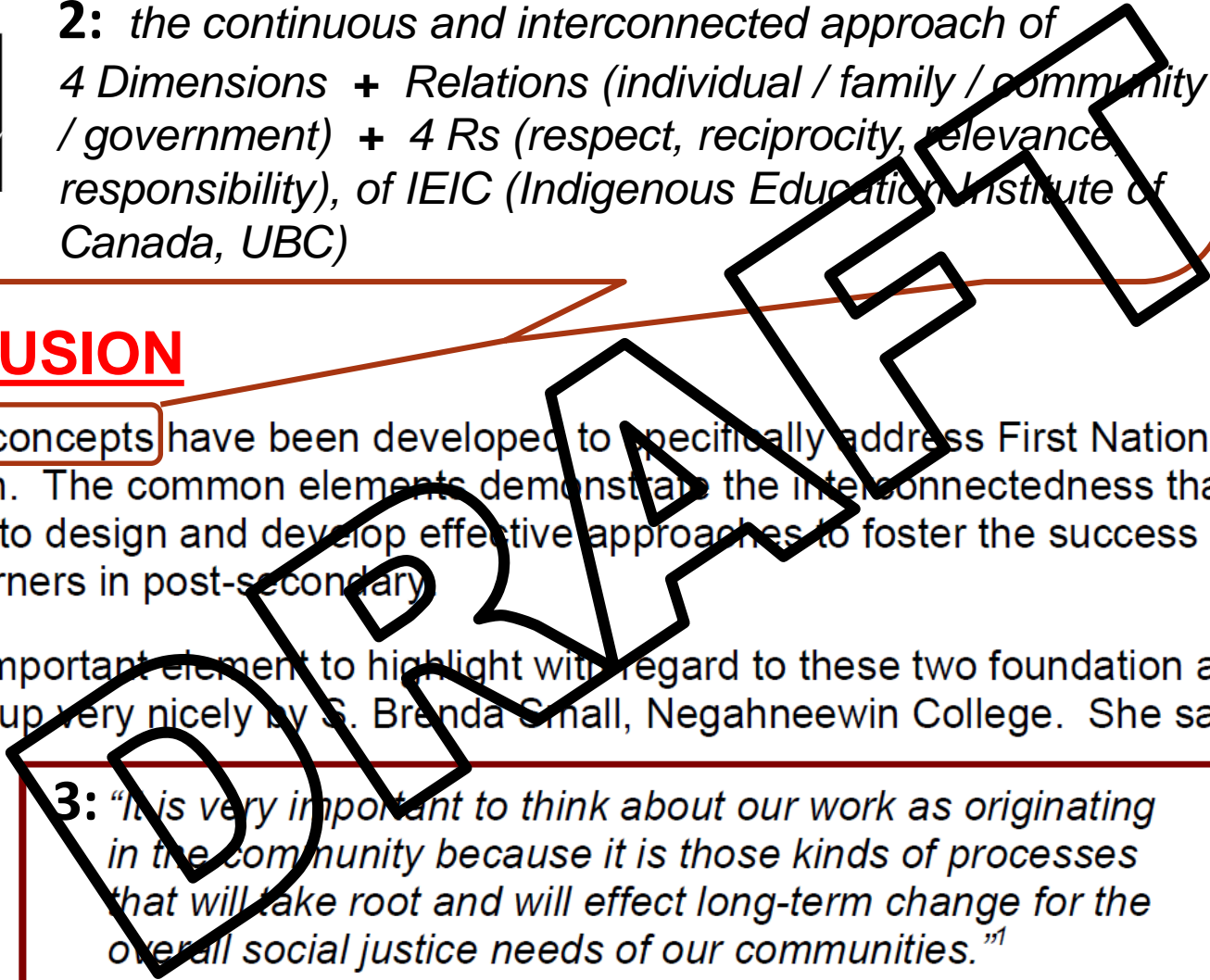
2: *the continuous and interconnected approach of 4 Dimensions + Relations (individual / family / community / government) + 4 Rs (respect, reciprocity, relevance, responsibility), of IEIC (Indigenous Education Institute of Canada, UBC)*

CONCLUSION

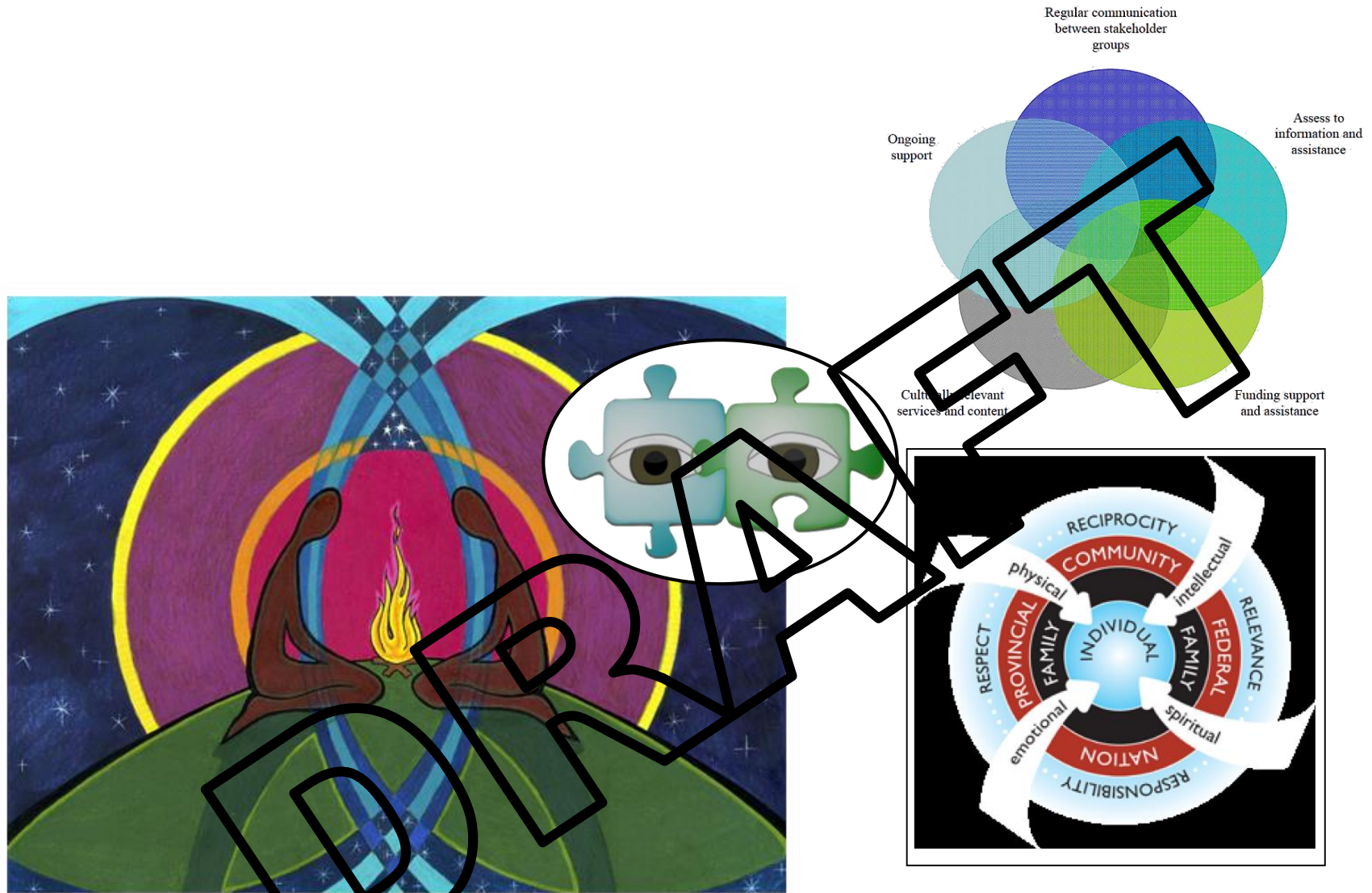
These **two concepts** have been developed to specifically address First Nations success in education. The common elements demonstrate the interconnectedness that must be considered to design and develop effective approaches to foster the success of First Nations learners in post-secondary.

The other important element to highlight with regard to these two foundation approaches is summed up very nicely by S. Brenda Small, Negahneewin College. She says,

3: *“It is very important to think about our work as originating in the community because it is those kinds of processes that will take root and will effect long-term change for the overall social justice needs of our communities.”¹*



Integrative Science & Two-Eyed Seeing: congruency with ONECA & IEIC



major section #2 in AFN 2012 report

- providing positioning and congruency contexts for Integrative Science & Two-Eyed Seeing -

CO-LEARNING for Two-Eyed Seeing

learning our strengths and learning together



CONCEPTS and ACTIONS (epistemologies)

- respect
 - relationship
 - reverence
 - reciprocity
 - ritual (ceremony)
 - repetition
 - responsibility
- the question
 - hypothesis (making & testing)
 - data collection
 - data analysis
 - model & theory construction

J. Archibald, 2001, Can. J. Native Ed. 25(1):1-5

CO-LEARNING for Two-Eyed Seeing

learning our strengths and learning together



KNOWLEDGE OBJECTIVES

collective, living knowledge to enable nourishment of one's journey within expanding sense of "place, emergence and participation" for collective consciousness and interconnectiveness

dynamic, testable, published knowledge independent of personal experience that can enable prediction and control (and "progress")

towards resonance of living within environment

towards construction of understanding of environment

CO-LEARNING for Two-Eyed Seeing

learning our strengths and learning together



METHODOLOGIES

weaving of patterns within nature's patterns via creative relationships and reciprocities among *love, land, and life (vigour)* that are constantly reinforced and nourished by **Aboriginal languages**

unweaving of nature's patterns (especially via analytic logic and the use of instruments) to cognitively reconstruct them, especially using **mathematical language (rigour)** and **computer models**

CO-LEARNING for Two-Eyed Seeing

learning our strengths and learning together



NATURAL WORLD (ontologies)

All my Relations

beings ... interconnective and animate:
spirit + energy + matter
with **CONSTANT CHANGE** within balance and wholeness

parts & wholes

objects ... comprised of parts and wholes characterized by systems and emergences:
energy + matter
with **EVOLUTION**

Integrative Science academic program within 4 year degree Bachelor of Science Community Studies

Assembly of First Nations
Education, Jurisdiction, and Governance



* Supporting First Nations Learners
Transitioning to Post-Secondary

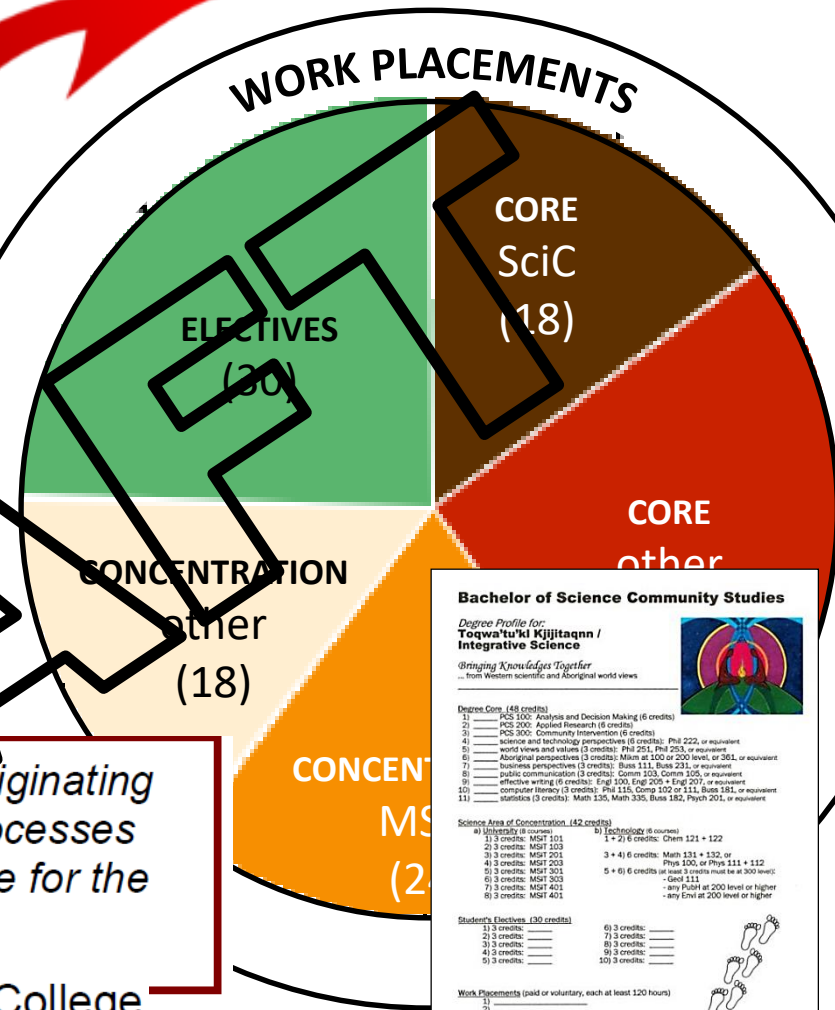
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page 36

"It is very important to think about our work as originating in the community because it is those kinds of processes that will take root and will effect long-term change for the overall social justice needs of our communities."

S. Brenda Small, Negahneewin College.

* <http://www.afn.ca/uploads/files/education2/postsecondarytransitionsreport.pdf>



Bachelor of Science Community Studies

*Degree Profile for:
Toqwa'tu'ki Kijjitaqnn /
Integrative Science*

*Bringing Knowledges Together
... from Western scientific and Aboriginal world views*

Degree Core (48 credits)

- 1) PCS 100: Analysis and Decision Making (6 credits)
- 2) PCS 200: Applied Research (6 credits)
- 3) PCS 300: Community Intervention (6 credits)
- 4) science and technology perspectives (6 credits): Phil 222, or equivalent
- 5) world views and values (3 credits): Phil 201, Phil 203, or equivalent
- 6) Aboriginal perspectives (3 credits): Math at 100 or 200 level, or 30L, or equivalent
- 7) business perspectives (3 credits): Busn 111, Busn 201, or equivalent
- 8) public communication (3 credits): Comm 103, Comm 105, or equivalent
- 9) effective writing (6 credits): Engl 100, Engl 200 + Engl 201, or equivalent
- 10) computer literacy (3 credits): Phil 115, Comp 102 or 111, Busn 181, or equivalent
- 11) statistics (3 credits): Math 130, Math 230, Busn 182, Psych 201, or equivalent

Science Area of Concentration (42 credits)

a) (select 3 courses)

- 1) 3 credits: MSIT 101
- 2) 3 credits: MSIT 203
- 3) 3 credits: MSIT 201
- 4) 3 credits: MSIT 203
- 5) 3 credits: MSIT 301
- 6) 3 credits: MSIT 303
- 7) 3 credits: MSIT 401
- 8) 3 credits: MSIT 401

b) (select 2 courses)

- 1 + 2) 6 credits: Chem 121 + 122
- 3 + 4) 6 credits: Math 131 + 132, or Phys 100, or Phys 111 + 112
- 5 + 6) 6 credits (at least 3 credits must be at 300 level):
 - any Phil at 200 level or higher
 - any Envi at 200 level or higher

Students' Electives (30 credits)

- 1) 3 credits: _____
- 2) 3 credits: _____
- 3) 3 credits: _____
- 4) 3 credits: _____
- 5) 3 credits: _____
- 6) 3 credits: _____
- 7) 3 credits: _____
- 8) 3 credits: _____
- 9) 3 credits: _____
- 10) 3 credits: _____

Work Placements (paid or voluntary, each at least 120 hours)

- 1) _____
- 2) _____

An overall average of 60% (in courses over your four years) is required for graduation.

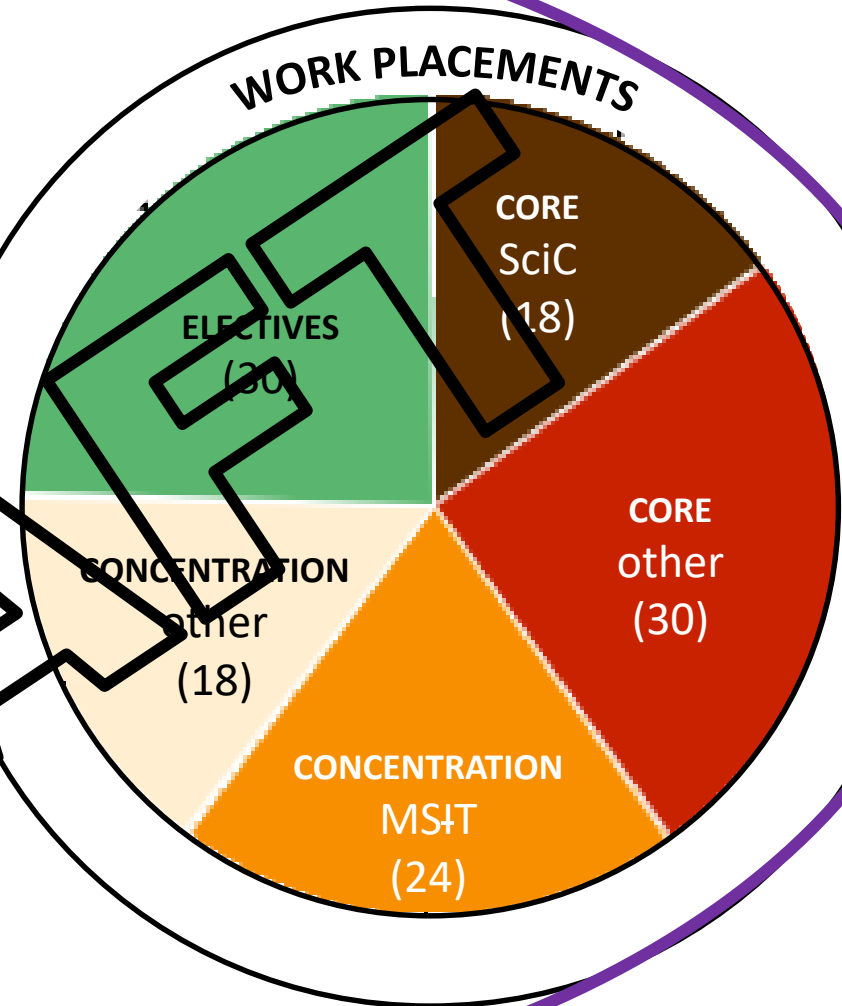
Integrative Science academic program

**EXTRA-CURRICULAR
SUPPORT REQUIRED**

for / towards:

1. Learners
2. Recruitment
3. Community
Stewardship
4. Instructors

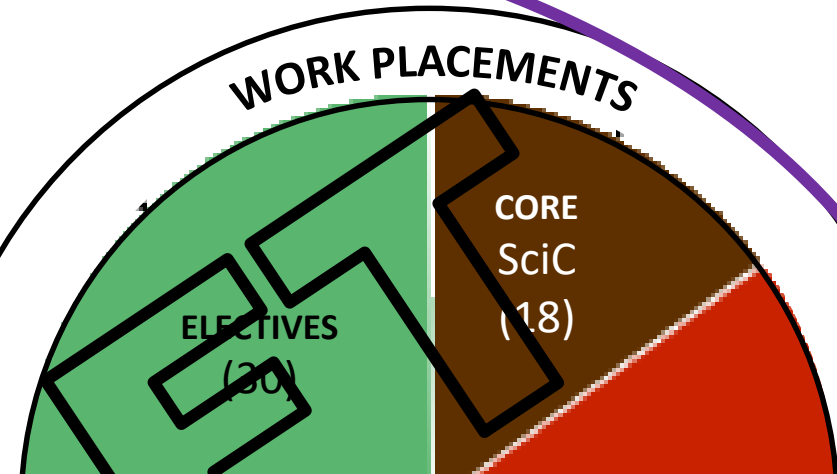
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Integrative Science academic program

**EXTRA-CURRICULAR
SUPPORT REQUIRED**

1. Learners



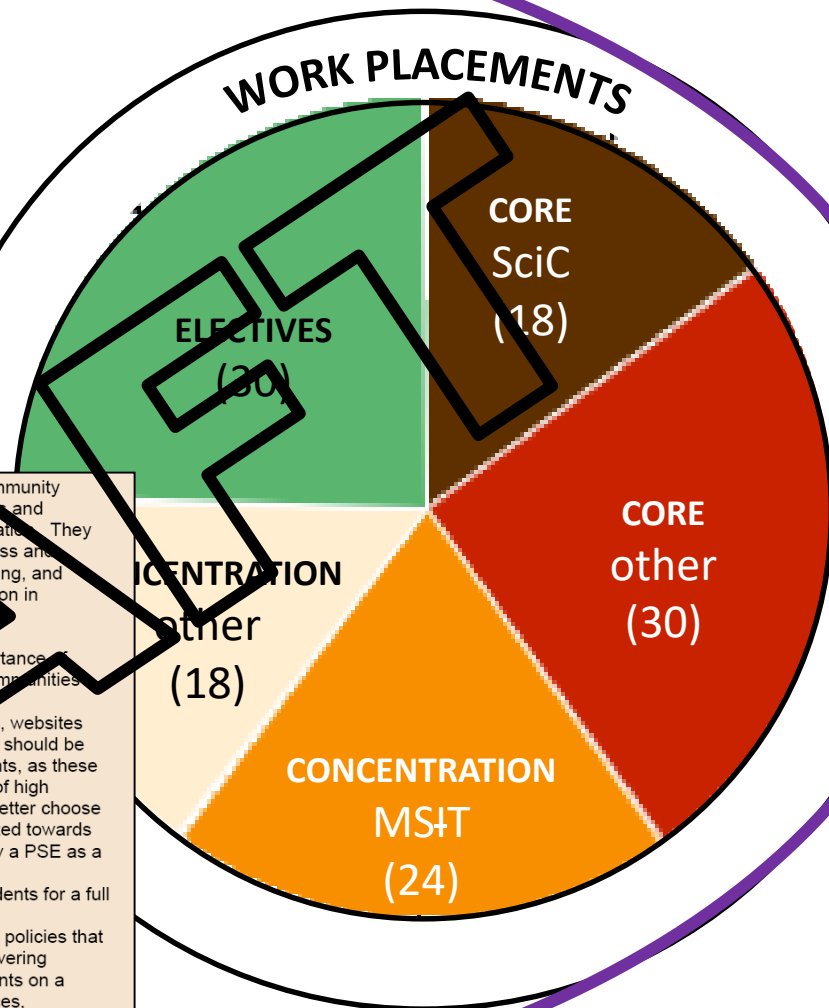
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Taking Action for First Nations Post-Secondary Education: Access, Opportunity, and Outcomes, 2010

Integrative Science academic program

EXTRA-CURRICULAR SUPPORT REQUIRED

1. Learners



Assembly of First Nations
Education, Jurisdiction, and Governance



Supporting First Nations Learners
Transitioning to Post-Secondary

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The Mi'kmaq Kina'matnewey (MK)⁸⁴ of Nova Scotia is another of many community organizations committed to taking action to enhance the preparation, access, and transitions of First Nations learners wishing to pursue post-secondary education. They found that best practices in supporting learners can be categorized as Access and Attraction, PSE Programming, Areas of Support, Data Collection and Tracking, and Collaboration and Communication.⁸⁵ Research to guide their collective action in supporting their students suggests the following:

1. continuing to support Aboriginal communities in promoting the importance of higher education, achieving quality jobs and autonomy for their communities through career fairs and information sessions
2. using proactive recruitment practices such as informative pamphlets, websites and summer camps to attract prospective students. These practices should be directed towards Aboriginal males as well as females with dependents, as these groups are typically underrepresented in PSE, and inform students of high demand areas of employment within their community to help them better choose a reliable course of study in PSE. Recruitment should also be directed towards Aboriginals at an early stage in their schooling so that students view a PSE as a realistic option for their future
3. offering transition programs at the community level that prepare students for a full academic course load in PSE
4. insisting that post-secondary institutions establish flexible admission policies that address the special circumstances of Aboriginal students without lowering admissions standards. Admissions standards should evaluate students on a range of factors such as transcripts, life experiences, and community involvement. Institutions should reserve seats in high demand, if not all, to meet the specific needs of the Aboriginal community, and
5. allowing coordination committees in each First Nations community to set and implement priorities around key community-driven programs⁸⁶



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Supporting First Nations Learners
Transitioning to Post-Secondary

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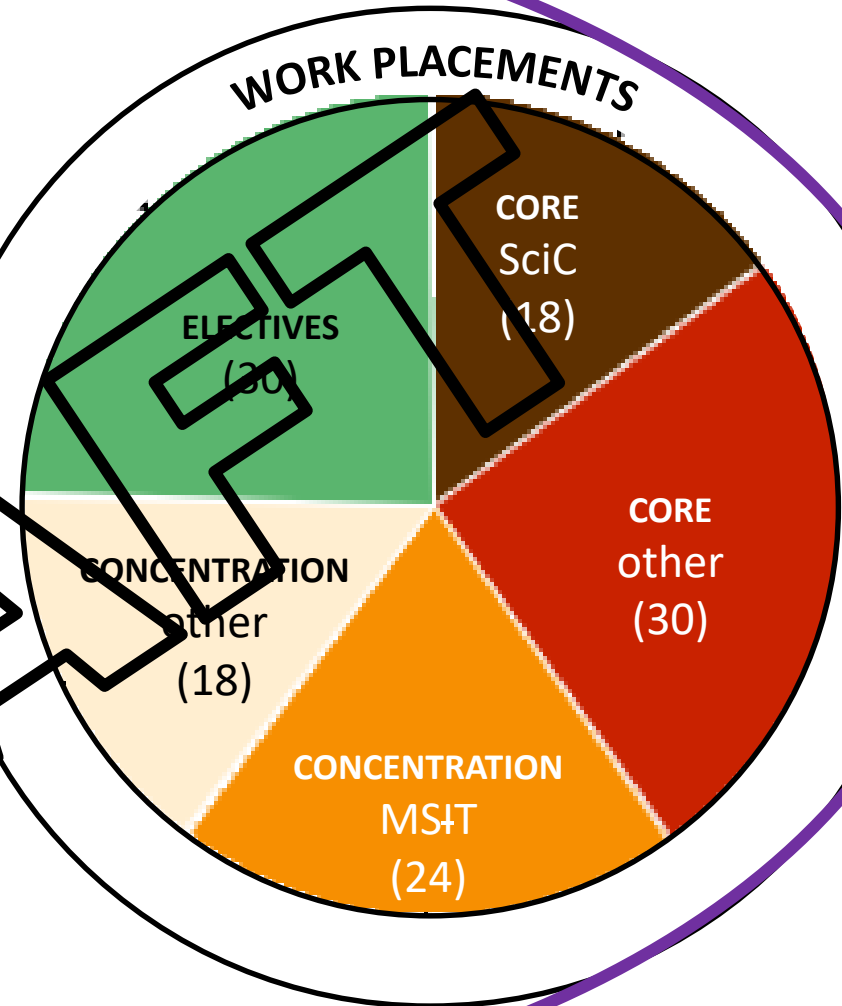
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Integrative Science academic program

**EXTRA-CURRICULAR
SUPPORT REQUIRED**

2. Recruitment

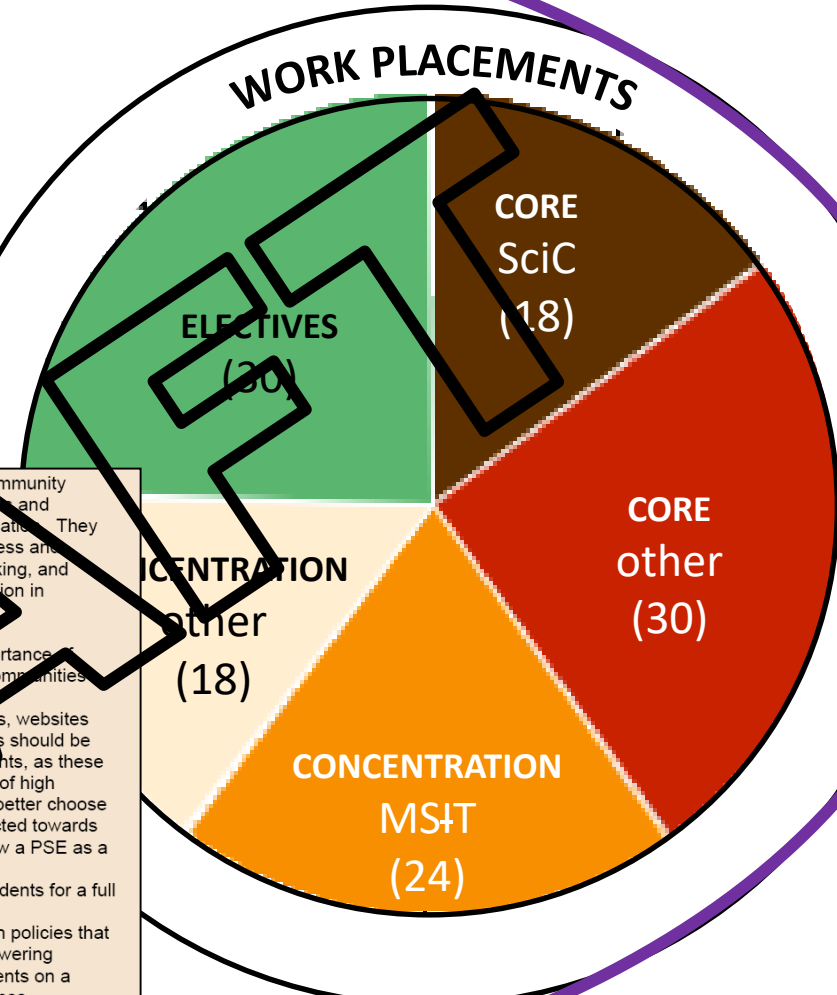
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Integrative Science academic program

EXTRA-CURRICULAR SUPPORT REQUIRED

2. Recruitment



Assembly of First Nations
Education, Jurisdiction, and Governance

Supporting First Nations Learners
Transitioning to Post-Secondary

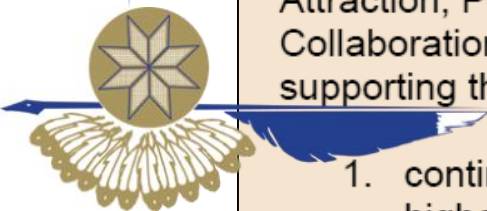
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Education, Jurisdiction, and Governance



Supporting First Nations Learners
Transitioning to Post-Secondary

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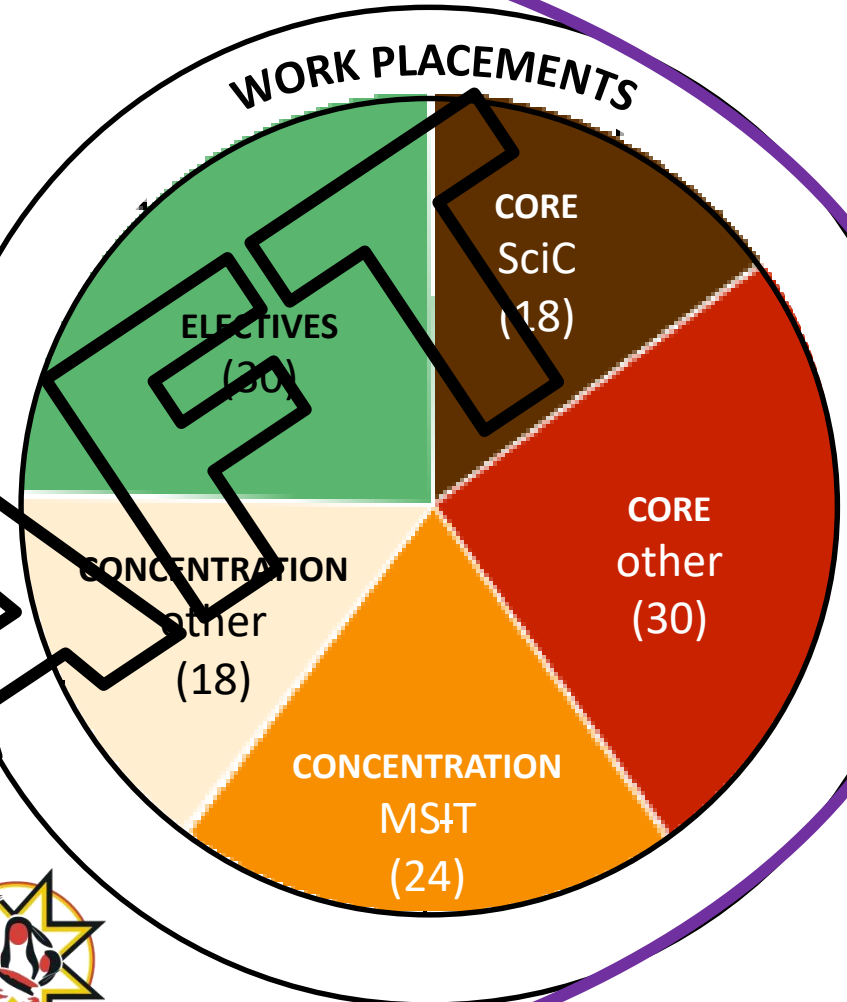
Integrative Science academic program

**EXTRA-CURRICULAR
SUPPORT REQUIRED**

3. Community Stewardship*



Atlantic Policy Congress
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www.apfnc.ca



* example possibilities only; formal outreach TBD



Supporting First Nations Learners Transitioning to Post-Secondary (page 21)

<http://www.afn.ca/uploads/files/education2/postsecondarytransitionsreport.pdf>

Strong Commonalities and Shared Priorities across FN Communities

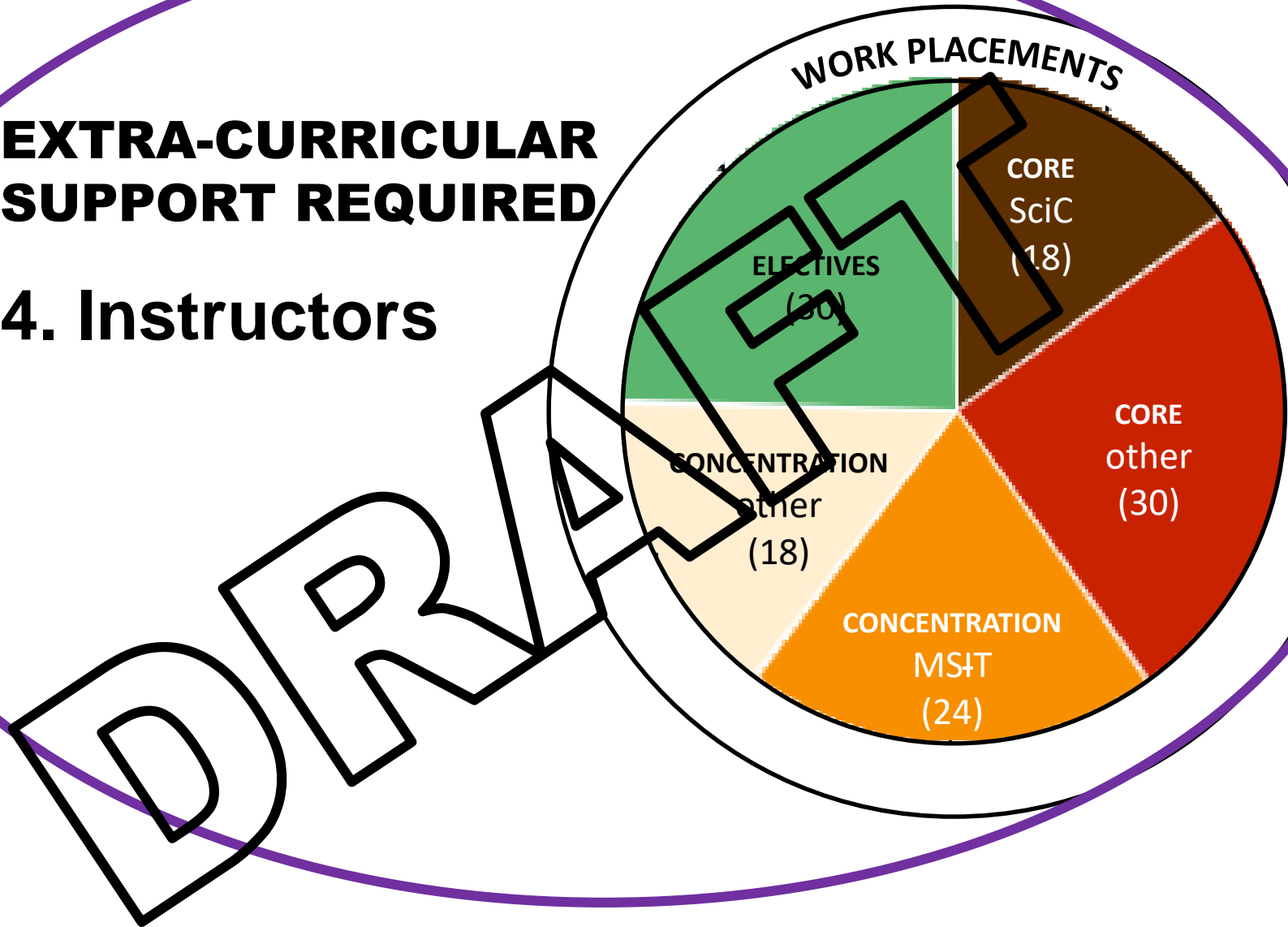
1. To live in safe, healthy communities – living in balance (physical, mental, emotional and spiritual);
2. Increase parental and community involvement by providing opportunities for learning through teaching of traditional values throughout the lifespan; in the home, at school (including Early Learning), on the land and in the community and workplace;
3. Understanding and becoming aware of our generational ties through clan/kinship and genealogy;
4. Increase the use and fluency of their languages among learners of all ages and in all areas of community life;
5. Ensuring the active and meaningful engagement of Elders throughout the community, as teachers, decisions makers and role models;
6. Providing more learning spaces to facilitate the transfer of historical, linguistic, cultural and Indigenous knowledge;
7. Building trusting relationships through consistent communications with all agencies, organizations and families;
8. Increasing community understanding of the roles and responsibilities of their territorial stewardship, through experiencing the teachings on and from the land;
9. Provide mentoring/employment opportunities for all professions and for all community members, with a focus on the youth.³³

These are all important considerations which provide a foundation for the design, development and implementation of programs and services to assist students throughout the lifelong learning journey.

Integrative Science academic program

**EXTRA-CURRICULAR
SUPPORT REQUIRED**

4. Instructors





**APCFNC/AAEDIRP
Elders
Research Project
2010-2011**

Honouring Traditional Knowledge

**Atlantic Canada
23 Elders
Mi'kmaq
Maliseet
Innu
Inuit**



THE ELDERS HAVE SPOKEN

ELDERS PROJECT REPORT

<http://www.apcfnc.ca/en/resources/HonouringTraditionalKnowledgeFinal.pdf>

APCFNC Elders Project:

HONOURING TRADITIONAL KNOWLEDGE



Atlantic Aboriginal Economic Development
Integrated Research Program



ATLANTIC POLICY CONGRESS
OF FIRST NATIONS CHIEFS SECRETARIAT
www.apcfnc.ca

ELDERS RECOMMENDATIONS

The following is the list of recommendations from the APCFNC Elders Project: Honouring Traditional Knowledge. It is an initial list concerning how Elders would like to be consulted when sharing Traditional Knowledge. Reading and acknowledging this list of recommendations should be considered a form of consultation with Atlantic Aboriginal communities.

1. It needs to be recognized that Atlantic Aboriginal communities are losing their Elders, their languages, and their cultural knowledge very rapidly. Therefore, Aboriginal communities and leadership need to recognize the urgency and importance of working alongside Elders and learning from their Traditional Knowledge immediately.
2. It is imperative that Elders be involved in all aspects of the territorial, cultural, linguistic, ecological, economic development, and social affairs of Atlantic Aboriginal communities. Elders are in a position to help prioritize what is most important because of their collective cultural knowledge.
3. Traditional Knowledge should be woven into all aspects of Aboriginal community life, including economic development, fisheries, health, social, law, environment, and education, etc.
4. Elders should be consulted in meaningful ways and have advisory roles for all Aboriginal community planning, development, implementation, and evaluation taking place. Meaningful involvement would include being members of steering committees and advisory committees that Elders have input into decision making.
5. Traditional Knowledge must be shared and passed on before it is lost. The ways in which Traditional Knowledge is passed on need to be directed by the Elders from each territory.
6. An Elders Council, appointed by Elders, that would advise on matters related to the sharing of Traditional Knowledge, should be formed for the Atlantic region. The Council would advise on matters related to protocols and/or ethics and the best practices for the sharing of Traditional Knowledge as well as the best practices for working alongside Elders. This would include work alongside Elders in all areas of community life and development including research.
The Elders Council, once formed, would engage in a process of co-learning with the Atlantic region universities to create a template for how the process of this knowledge transfer could occur.
7. Elders should be involved in developing and approving educational curriculums related to Traditional Knowledge for Aboriginal community schools and provincial and post-secondary institutions in the Atlantic region.
Traditional Knowledge should be woven into the social studies, science, and language curriculums for primary and secondary schools in Atlantic Aboriginal communities. This would ensure proper and meaningful education for Aboriginal learners, enable the communities to develop a balance between western and Aboriginal learning methods, and better prepare Aboriginal children for their future paths.
Post-secondary institutions should be compelled to seek guidance from the Elders Council (described above in recommendation #6) to develop appropriate curriculums related to Traditional Knowledge for relevant post-secondary programming.
8. Each Aboriginal community needs to encourage the use of traditional practices, which are products of Traditional Knowledge. This would encourage younger generations to learn about and respect traditional practices such as traditional laws, cultural and spiritual practices, language learning, and practices related to hunting and fishing, food gathering, medicine, ecology, social arts, and education.

To view the complete project, go to:

<http://www.apcfnc.ca/en/resources/HonouringTraditionalKnowledgeFinal.pdf>

BACKGROUND

The Atlantic Policy Congress of First Nations Chiefs (APCFNC) brings together 38 First Nations in the Atlantic region of Canada as well as the Inuit in Labrador. Through the Atlantic Aboriginal Economic Development Integrated Research Program (AAIEDIP) administered by the APCFNC, from 2009 to 2011, 21 Mi'kmaq, Wolastoqiyik, Innu, and Inuit Elders have been involved in a project called "Honouring Traditional Knowledge."

This project was initiated because of the critical importance of consulting with Elders and having their perspectives included in community economic development projects and in research on Aboriginal economic development.

Elders determined the process and outcomes for the project. The project was supported by APCFNC staff and Aboriginal community members. As a foundation for the work on economic development research, APCFNC sought guidance from Atlantic region Elders on how they would like to be consulted when sharing Traditional Knowledge and Aboriginal worldviews. As part of the project, the Elders have made eight recommendations (see page) concerning Traditional Knowledge and its importance.

The Atlantic Chiefs, having reviewed the eight recommendations at their 16th Annual General Meeting on September 29, 2011, support the recommendations put forward by Atlantic Region Elders as an All Chiefs' Resolution #2011-14.

MOTIONED BY: Chief M'oad Joe, Miawpukek First Nation
SECONDED BY: Chief Koderick Googoo, Weychoah First Nation
DECISION: Passed by consensus
DATE: September 29, 2011

HONOURING TRADITIONAL KNOWLEDGE COMPONENTS

Elders Mawio'mi August 2010

An Elders Mawio'mi (polish) session gathering in Mi'kmaq brought together Elders from four Aboriginal cultures of the Atlantic Region — the Mi'kmaq, the Wolastoqiyik, the Innu, and the Inuit. From August 19 to 24, 2010, Elders gathered in Miramichi First Nation at the Goshay Heritage Centre. The Elders asked for the meeting to be videotaped. They discussed that a transcription of the Mawio'mi be released for educational purposes.

Video: Honouring Traditional Knowledge

This video highlights the role of Elders and Traditional Knowledge. Under the Elders' guidance the video was made from footage taken at the Elders Mawio'mi. It can be viewed by going to <http://tqg.ny.gov/ATKwVUA>

Elders Recommendations

The Elders made eight recommendations concerning Traditional Knowledge. The recommendations are based on discussions from the Elders Mawio'mi. See next page.

List of Resources

This is an initial list of protocols and/or ethics and best practices for the sharing of Traditional Knowledge and for working alongside Atlantic region Elders in research. It contains community-based and university resources. It is a living document that will be added to as an ongoing basis. <http://apcfnc.ca/eldersproject-wiki/protocols>



FOR MORE INFORMATION PLEASE CONTACT:

Gillian Austin
Research Coordinator
Atlantic Aboriginal Economic Development Integrated Research Program, AAIEDIP

Phone: 499-8621 (office) or 424-0733 (cell)
Email: gillian.austin@apcfnc.ca

ELDERS 8 RECOMMENDATIONS

Therefore it be resolved that the Atlantic Chiefs, having reviewed the recommendations at their meeting on 29 September 2011 hereby support the 8 recommendations put forward by Atlantic Region Elders as part of the APC Elders Project: Honouring Traditional Knowledge.



Atlantic Policy Congress
Of First Nations Chiefs Secretariat
www.apcfn.ca



RECOMMENDATIONS: #1-4

- 1.** It needs to be recognized that Atlantic Aboriginal communities are losing their Elders, their languages and their cultural knowledge very rapidly. Therefore, Aboriginal communities and leadership need to recognize the urgency and importance of working alongside Elders and learning from their Traditional Knowledge immediately.
- 2.** It is imperative that Elders be involved in all aspects of the territorial, cultural, linguistic, ecological, economic development and social affairs of Atlantic Aboriginal communities. Elders are in a position to help prioritize what is most important because of their collective cultural knowledge.
- 3.** Traditional Knowledge should be woven into all aspects of Aboriginal community life, including economic development, fisheries, health, social, law, environment and education etc.
- 4.** Elders should be consulted in meaningful ways and have advisory roles for all Aboriginal community planning, development, implementation and evaluation taking place. Meaningful involvement would include being members of steering committees and advisory committees so that Elders have input into decision making.

RECOMMENDATIONS: #5-8

- 5.** Traditional Knowledge must be shared and passed on before it is lost. The ways in which Traditional Knowledge is passed on, needs to be directed by the Elders from each territory.
- 6.** An Elders Council, appointed by Elders, that would advise on matters related to the sharing of Traditional Knowledge, should be formed for the Atlantic region. The Council would advise on matters related to protocols and/or ethics and the best practices for the sharing of Traditional Knowledge as well as the best practices for working alongside Elders. This would include working alongside Elders in all areas of community life and development including research.
- 7.** Elders should be involved in developing and approving educational curriculum related to Traditional Knowledge for Aboriginal community schools, provincial and post-secondary institutions in the Atlantic region.
- 8.** Each Aboriginal community needs to encourage the use of traditional practices, which are products of Traditional Knowledge. This would encourage younger generations to learn about and respect traditional practices, such as traditional laws, cultural and spiritual practices, language learning and practices related to hunting and fishing, food gathering, medicine, ecology, science, arts and education.

INTEGRATIVE SCIENCE

= bringing together
Indigenous and Western
scientific knowledges and
ways of knowing
(as knowledge systems)

TWO-EYED SEEING

= learning to see with
the strengths in both
Indigenous and Western
knowledges and ways
... and use them together

