



Multiple Ways of Knowing

Indigenous Land-Based Knowledge

Indigenous land-based knowledge includes a sophisticated body of knowledge that has been generated over thousands of years, is passed down from one generation to another, and evolves over time. It is knowledge that pertains not only to cultures and beliefs, but also physical space, environments, and place.

The term *Traditional Ecological Knowledge (TEK)* is a popular term often used to refer to the knowledge that First Peoples' have in relation to the natural world, and specifically the distinct ecosystems and landscapes in their traditional environments. QUILLS, however uses the phrase *Indigenous land-based knowledge (ILBK)* in place of Traditional Ecological Knowledge. This is because the way in which TEK is taken up often ignores the spiritual nature of Indigenous ways of knowing and being. Indigenous ways of knowing and being are holistic encompassing mental, physical, emotional and spiritual components. All aspect of Indigenous Knowledge must be considered when looking at the world through an Indigenous lens.

The Indigenous land-based knowledge you will encounter in the QUILLS program is local knowledge pertaining to the Katarokwi (Kingston) region which has been (and continues to be) passed down from generation to generation. It is knowledge about how to live and thrive in this place. It is the knowledge that allowed the Anishinaabe and Haudenosaunee to flourish for thousands of years in this area.

To learn more about Indigenous land-based knowledge please contact us directly for an unlisted copy of a public webinar delivered by Robin Wall Kimmerer author of *Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge and the Teachings of Plants*. The public webinar, hosted by the Queen's University Biological Station, entitled *What Does the Earth Ask of Us?*, explores the manner in which, in the face of rapid environmental change, Indigenous land-based knowledge can help to engender more reciprocal, holistic, and interdependent relationships with the natural world.

A definition you could consider using with your class is as follows:

Indigenous land-based knowledge is a collection of knowledge founded upon Indigenous peoples' relationship with land, water, plants and animals since time immemorial. This relationship to land is an integral part of Indigenous identities. This knowledge is collected through a closely connected reciprocal relationship with land, and observing, interacting, and experiencing the natural world, in which we are a part of. It is understood that every being is alive and has a spirit, and that we are all interconnected and interdependent. It is passed down through family, Elders, community members, and Knowledge Keepers. Land-based knowledge



will vary from community to community, as it is dependent on each different geographical area, meaning that there is a diverse collection of Indigenous Land-Based Knowledge, and not just one single truth.

Science:

The Pan Canadian Science Project defines sciences as:

“A human and social activity with unique characteristics and a long history that has involved many men and women from many societies. Science is also a way of learning about the universe based on curiosity, creativity, imagination, intuition, exploration, observation, replication of experiments, interpretation of evidence, and debate over the evidence and its interpretations. Scientific activity provides a conceptual and theoretical base that is used in predicting, interpreting, and explaining natural and human-made phenomena. Many historians, sociologists, and philosophers of science argue that there is no set procedure for conducting a

scientific investigation. Rather, they see science as driven by a combination of theories, knowledge, experimentation, and processes anchored in the physical world. Theories of science are continually being tested, modified, and improved as new knowledge and theories supersede existing ones. Scientific debate on new observations and hypotheses that challenge accepted knowledge involves many participants with diverse backgrounds. This highly complex interplay, which has occurred throughout history, is fueled by theoretical discussions, experimentation, social, cultural, economic, and political influences, personal biases, and the need for peer recognition and acceptance” (The Pan Canadian Science Project (Nature of Science)).

Western Science and Scientism:

As is reflected in the definition above, while science is a universal activity the methods, concepts, and experiences used to gain knowledge of the natural world, and ways in which that knowledge is interpreted, applied, and exploited vary across cultures. In this manner all cultures around the world have a form of science with distinct and overlapping features. Despite its plurality, Aikenhead and Michell in their 2011 text, *Bridging Cultures: Indigenous and Scientific Ways of Knowing Nature*, caution that the following fundamental assumptions inform how science is taken up in Western contexts. They argue that Western science:

- presumes that nature is knowable
- is shaped by powerful institutions such as government and industry
- assumes theories to be correct if they enable scientists to form accurate hypothesis about the natural world
- holds that knowledge is tentative and open to change
- purports that knowledge is generalizable to other contexts
- holds that time is linear
- does not believe spirituality is relevant to the scientific method



- is reductionist
- is anthropocentric
- and assumes reality can be understood objectively unencumbered by subjectivity (Aikenhead & Michelle, 2011).

According to Aikenhead and Michelle, these assumptions leave science susceptible to being coopted by Western capitalism and industrialism.

The cooptation of Western Science by Western capitalism is problematic since (although there are many different types of science, rooted in different cultural ways of knowing) science, as it is taken up in the West, has become a dominant force around the world. The dominance of Western science is what Potawatomi scholar Robin Kimmerer refers to as Scientism.

Scientism is one factor responsible for the high-attrition rates of Indigenous learners from STEM subjects and fields. Many Indigenous learners are particularly mistrustful of Western science as they attribute the degradation of their traditional land-base to the impacts of Western science.