



Knowledge Building Resource Guide: Deepening your EcoSchools Program



Natural Curiosity

The goal of Knowledge Building is not simply to create lifelong learners, but rather, lifelong contributors.

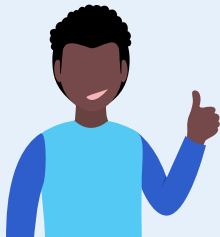
Carl Bereiter, cited in Natural Curiosity 2nd Edition, p. 14

Inquiry and Knowledge Building

A key component of Inquiry-based learning, knowledge building is a student-centred pedagogy that emphasizes collaborative knowledge construction. The goal of knowledge building is to create active spaces – both online and in the classroom – to share and build upon a diversity of ideas, hypotheses, information, and perspectives. Through this collaborative process, students widen and deepen their understanding to co-construct knowledge as a community, holding ideas and knowledge advancement at the centre of their learning.



Connecting to the EcoSchools Program



Inquiry and knowledge building practices are an excellent way to deepen your EcoSchools program, by providing intentional spaces for student voices, ideas, and reflection, which are critical when discussing sometimes challenging topics such as climate change or biodiversity loss. Consider undertaking this practice at the beginning of the year, to understand what topics are important to students and to define the key areas of action for the year.

Knowledge building “serves to identify shared problems and gaps in understanding and to advance the understanding beyond the level of the most knowledgeable individual” (Scardamalia, 2002, p.12).

Knowledge building is a continuous process that resonates within all aspects of classroom life. Grounded in discourse practices that promote the exchange and refinement of ideas, it is an integral aspect of Inquiry and Engagement, the first branch of Natural Curiosity’s Environmental Inquiry framework. The knowledge building approach to environmental inquiry is guided by a number of key principles summarized in Table 1 (Natural Curiosity 2nd Edition, p. 18).

Table 1: Key Principles of Knowledge Building within an Environmental Inquiry



Students work with authentic problems and real ideas



All ideas are improvable



A diversity of ideas is valued



Students exercise epistemic agency



All members assume collective responsibility for community knowledge

Scardamalia, 2002



Designing Knowledge Building Opportunities

Knowledge building can be flexible in design, ranging from more structured, formal activities (such as a guided learning session), to more informal, open-ended opportunities for learning (such as a spontaneous discussion). Within the flexibility of the knowledge building practices, it is important to teach about the process and ensure respectful, productive discussion by establishing protocols.

What is a Knowledge Building Circle ?

An example of a more structured method of knowledge building is a Knowledge Building Circle (KBC). A circle is beneficial for knowledge building for the following reasons:

- Circles help to build a sense of community
- Circles support face-to-face dialogue, which promotes active listening while also strengthening students' non-verbal understanding
- Circles encourage respectful communication and turn-taking since students must learn to take turns speaking
- A circle configuration is non-hierarchical, allowing all participants in the circle - both students and educators - to operate as co-learners from equal positions in the space



How is a Knowledge Building Circle conducted?

In classes new to knowledge building, the educator may support the conversation by selecting who will speak next (ensuring that all willing students have a chance to participate). Older or more experienced students, however, may take on the responsibility of selecting who will share next. As students become more comfortable with the process, their non-verbal communication skills will allow them to have an uninterrupted conversation.

Some examples of questions that encourage knowledge building:

- “What do you notice?”
- “What do you think might happen if ...?”
- “Does this remind you of anything?”
- “What can we do to find out?”
- “Why do you think that happened?”
- “How has your thinking changed?”
- “What evidence supports your idea?”

EcoSchools Tip

Consider holding a KBC before, during, or after running an environmental lesson or EcoSchools action, to encourage group reflection and understanding.

Find resources and guidance to support a variety of EcoSchools initiatives on the [EcoSchools Certification Application](#).



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Resources List

If you're ready to discover more about the uses and applications of knowledge building, please explore the resources list below!

Videos

- **Knowledge Building Circle: What's at the centre of the earth?**

In this video, Zoe Donoahue, a teacher at the Dr. Eric Jackman Institute of Child Study Laboratory School leads her class in a discussion exploring what might be beneath the ground we walk on.

- **Knowledge Building Lets Them Discover**

In this video, teacher, James Lim, goes over his approach to knowledge building, and how to engage in the knowledge building discourse with middle school/high school students.

- **Self-Guided Learning Series**

Designed for self-guided learning, this free program includes a 5-part instructional video series that provides an introductory exploration of Natural Curiosity's four-branch environmental inquiry framework, deepened by Indigenous perspectives and is grounded in knowledge building discourses.

- **Knowledge Building Trailer**

This short video by The Learning Exchange showcases the importance of knowledge building in the classroom and beyond.

Websites

- **Natural Curiosity**

- **EcoSchools Canada**

- **Let's Talk Science - Knowledge Building Circle**