

How Do You Acquire Knowledge?

A classroom discussion

Prior to teaching about Traditional Ecological Knowledge (TEK, lesson 2), have a class discussion about all the different ways you can learn and know about the physical and natural world. This discussion will help prime students about the diverse ways you can acquire and communicate information.

If you are not familiar with Indigenous ways of knowing, please be sure to read the “New to TEK” teacher’s guide prior to moderating this conversation!

Goals of the Discussion

Two major goals of this discussion are:

1. For students to consider the different ways information - and particularly scientific or engineering information* - can be communicated and acquired.
2. To allow students to critically think about how they acquire information in their own lives.

**We consider scientific information to be information about the natural and physical world. This can include items not always thought of as science in popular imagination like cooking (food chemistry) or gardening (agriculture, biology). Engineering knowledge includes how to build tools and structures.*

Notes for the Discussion

We suggest NOT using the word “science” at the beginning of this discussion. Using the word “science” can make students narrow their thinking, and the goal is for students to expand their thinking. Instead, ask students how we gain “information and knowledge.”

Students’ preexisting knowledge can inform how to direct this discussion. For example, if students have a strong background in Western science methods, you might want to direct the conversation toward ways of knowing that are more aligned for Traditional Ecological Knowledge (TEK). For example, many people think of experiments when they think of science. Experiments are an important part of science- but they are not all of it!

Observing, noticing, finding patterns, asking questions, and sharing knowledge are all parts of science.

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Discussion Question Ideas

Ask students how they have knowledge of the physical and natural world around them.

Help them define what this means and to understand that this is not a trick question! You want students really thinking about what they know and how they know it.

Examples of follow-up questions that can guide the discussion:

- How do students know the sun rises and sets everyday? Did they have to read that in a book? Did they have to do a study?
- If a student wanted to know exactly the time the sun set every night, how would they find that out? Do they already know/have(?) that information? If not, what tools would they need to use?

Potential Student Responses: Most students know that they can see the sun rise and set just by living their life every day. If they wanted to know the exact time it rises and sets they would have to use a clock and write down the time each day - a study - or they could find the information online, or in a book, or from someone who observed it previously. They might notice on their own that there is less sunlight in winter, or a parent or other adult might have told them that.

- What other things could students know just by living their life and paying attention to the world around them? What information did adults or older people in their life share with them? What did they have to read about to know?

Students might answer about items like knowing the sun heats them up or that water freezes into ice in the cold/winter. They might have learned cooking skills passed down from their parents or grandparents, or aunts, uncles, or a friend. Perhaps their families taught them how to use tools to fix furniture or toys. Maybe they garden together. If not their family, perhaps a teacher in school or a friend. (It's important to do this discussion in an inclusive way and ensure all students can find things they have learned from others).

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Discussion Question Ideas (cont)

- Do students have any expertise with nature that perhaps others do not?

Potential student responses: Maybe they have a pet whose actions they have gotten to know well and they can predict. Maybe they watch ants outside or know that plants can grow through broken cracks in concrete. Do they know what happens when you heat certain foods, or mix certain substances? Even human behavior can count! (Ensure students answer without putting others down).

Goals of the Discussion, Expanded

It's important that all students during this discussion realize they have obtained knowledge through living and observing, and from their communities. Even if it's smaller things. Students should also realize some of the information they have is from Western science and formal studies. We would like students to understand that there are diverse and complementary ways of obtaining knowledge and information.

Note: We recommend trying to keep the discussion somewhat grounded in the physical and natural world but students will likely want to also discuss computers, video games or other modern technology. Modern tech and other subjects are fine as an addition.

A note on the term "TEK" and non-Indigenous students (for this and all lessons in this series)

TEK is often associated with Indigenous communities, and includes aspects beyond "facts," as described in the "New to TEK Teacher's Guide." However if non-Indigenous students have a strong understanding of their local environment and ecosystems they can be said to have strong "local ecological knowledge."

Find this and associated lessons at: www.stemtradingcards.org/teklessons

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With additional support
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(Please see lesson page)

Find all TEK lessons at STEMTradingCards.org/TEKlessons

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