**Processing Knowledge Activity:**

**“So What?”**

**When**
Prior to the expedition

**Disciplines**
All sciences

**Description**
This activity is designed to encourage students to question their own learning and the implications that learning has to them as well as to the broader community. For example: How will this knowledge, these skills and these concepts influence individual lives and the life of the community? What impact does this have on the environment? The activity also helps teachers to reflect about the relevance of lessons within their own curriculum and appropriateness of their teaching strategies. And it is a way for students to take the concepts and apply them in new ways making them more relevant.

**Learner outcomes**
The student will:
- Recall/articulate the week’s work, or particular concepts learned during the week.
- Discuss the connections between subjects explored. (i.e. – math/science, science/social studies)
- Make predictions about how these concepts might impact their own lives/future learning.
- Consider how these concepts might be connected to or help students to make positive impacts in the greater community.
- Use their voice to clarify and articulate their own investment in learning.

**Materials**
- A space large enough for a circle discussion. It is important that everyone can see everyone else during this activity. Everybody is treated as an equal participant, even the teacher, in this discussion.
- A talking stick or other built in procedure that helps students to focus on the speaker and take turns

**Background**
Students learn to use a Kestrel pocket weather meter, a probe thermometer and an IR (infrared surface temperature) thermometer to measure temperature using a Celsius scale. As teams they choose five different sites where they measure the temperature using all three thermometers. They record their findings and consider which tool measures most accurately what they intended to measure. Teams present and discuss their findings with the class.
Philosophy  (by Jean Trabue Kosky)

So What? It seems that we need to be irreverent enough in our teaching to allow our students to ask this question. In fact, we need to insist they ask this question. The question offers the students a chance to discuss the particular concepts/skills they learned during the week and share why/if they think that exercise was relevant.

By taking time with our students to examine their learning we engage their imagination and further their understanding. The time has long since passed (if it ever existed) when discreet factual knowledge will suffice. Today’s learner must be comfortable connecting new knowledge with previous, and questioning what may not make sense in light of the new knowledge. And, this type of questioning is not only found in scientific inquiry. Great quantities of time are spent considering a multitude of disciplines throughout the elementary and secondary years. Along with science, we study phonics, history, math, literature and hand-writing. To our students, some of it must seem boring, irrelevant, and a waste of time. By asking students to reflect with their teachers, and especially with their peers, in activities such as “So what?” we open the door to more invested thinkers. Students connect their learning to their lives, which can guide further inquiry. At the same time, teachers can reflect on the relevance of lessons and expand or contract their own teaching strategies. It is a simple question with intriguing answers. So what?

Example of a typical 2nd Grade discussion:

Imagine a 2nd grade class discussion at the beginning of their year-long seed study. Earlier in the week students completed the initial lesson of observing, predicting, opening, diagramming and comparing data found in various fruits and “vegetables”.

Teacher: So, why do you think we spent so much time this week opening up fruits and vegetables to see what was inside – especially when we were pretty sure we already knew what was inside some of them? So what?

Student 1: Well, we figured out that all fruits hold seeds for plants.

Teacher: We sure did. So what?

Student 2: Plants need to have seeds?

Student 3: Why? (Some students smirk, knowingly)

Teacher: Great question!

Student 3: Uh, so they can make more plants?

Student 1: Yeah that’s right.

Teacher: So what?

Student 4: We eat plants.

Student 2: Yeah! So do animals.

Student 5: Horses eat apples …

Student 6: They eat grass too. And corn. Cows eat that too.

Teacher: Hmmm? So what?

Student 3: Maybe without plants some animals would starve?

Student 4: Yeah, but we wouldn’t because we eat meat too.

Student 7: Not if you’re a vegetarian.

Student 3: Yeah, but what if all the animals starved?
Student Experiences LESSON:  
“So What?”

This demonstrates the basic format. The discussion lasted about 10 minutes with the students coming to the conclusion that without the ability to reproduce, plants would all get eaten and would be no more. Without plants, animals and humans would starve. Certainly, some of the students may have begun to make these connections during the initial lesson, but the whole class had the chance to address, analyze and articulate during this reiteration. It solidified the ideas that were percolating. By asking “So what?” the children took ownership of their knowledge and those connections. With the teacher’s guidance the children constructed their own knowledge. The ideas they discussed that day were indeed foundational ideas that would spread - into later studies of trees, systems, food acquisition, species diversity, habitats.

This same activity can be used for students from grades K-12 – the only thing that may change is the need to establish (and reestablish) proper discussion behavior. This is especially true during the middle years, where they need to practice appropriate behaviors that are usually very unlike the ones they typically see on reality-TV shows. Likewise, the processing and conclusions that older students will come up with will be much more refined and hopefully, become more connected and abstract.