

Breakout 2C

Welcome, we're about to begin this session. My name is Randy Russell; I'll be serving as the "OPL" (Online Participant Liaison) for this session. That means I'll be blogging as the session proceeds, trying to capture the essence of what is said "live" here in the conference room at NCAR in Boulder. I'll also try to serve as the voice (again, "live" in the room) for those of you who are attending virtually, online. I'll attempt to bring comments from the online chat into the "live" discussion here in Boulder.

This blog is also intended to serve as an archive of the discussion in this breakout session.

Personally, I work (here in Boulder) for the Education and Outreach Program at UCAR. I do web site (mostly Windows to the Universe, www.windows.ucar.edu) and interactives development, online course development and teaching, and professional development workshops for teachers. My work spans a range of topics in the Earth Sciences and Space Science. My science background is in astrophysics and aerospace engineering; my Ph.D. is in education from Michigan State.

Susan Van Gundy is the facilitator for this session (I'll use initials henceforth to reference people; so Susan will be SVG).

Other "live" participants are: Ben Sucer, Sandra Henderson, Bob Ricky, Susan Avery, Parker Pennington, Caspar Amman, Mark Johnson, and Steve Wilton.

Group is discussing whether goal here is guidelines for atmospheric science, climate change, or both. Consensus seems to be that this is primarily meant to be about atmosphere; but that climate is inextricable, as are other elements of Earth System (oceans, etc.).

Online participants - please remember to refresh your browser every 30 seconds to 1 minute to see changing blog text.

First proposed Essential Principle - Energy from the Sun drives the atmosphere. (some debate over "the atmosphere" vs. "climate" vs. "Earth system")

Brainstorming more Essential Principles:

- Atmosphere co-evolved with life on Earth
- Origin of atmosphere - comparisons to other planets; change over time
- atmosphere is thin gaseous envelope
- atmosphere supports/is essential to life on Earth; makes Earth habitable; not just oxygen content
- life effects the atmosphere
- atmosphere important to retaining liquid water on planet (life)
- various roles of water in atmosphere; water moving around; heat transport by atmosphere, especially involving water
- atmosphere is dynamic; changes over time, many different time scales
- hazards associated with atmosphere
- structure and composition of atmosphere; what is the definition of atmosphere?
- atmosphere embodies weather and climate

An atmosphere represents and integral part of an evolving planet.

Atmospheric composition is modulated by life.

Atmosphere is a mechanism for connecting places; fastest route for materials to circulate to different place on planet. Part of circulation or flows in atmosphere idea?

Atmosphere acts as a membrane; keeps some things out, others in; preferentially in some cases.

Should use idea from ocean principles brochure; atmosphere and humans are inextricably interconnected (ocean essential principle #6).

Mark Johnson encourages group to consolidate ideas so far into a shorter condensed list of essential principles.

1. Sun as driver
2. structure & function
3. origin & co-evolution with life
4. atmosphere-humans interconnected
5. essential to life
6. agent of transfer
7. dynamic

Discussion of how "up front" the statement that humans are changing atmosphere should be; should it be a concept under some Essential Principle, or an essential principle itself. Consensus seems that it should be an element under one or more other "more strictly scientific" Essential Principles.

More discussion about refining skeleton of Essential Principles above.

Discussion of how to phrase (and emphasis of) role of life in atmosphere; key Essential Principle, or part of atmosphere changing.

What about weather? Key concept in education wrt atmosphere.

Atmosphere provides essential conditions for water and life.

What about role of water? Should it be an essential principle?

This session is wrapping up now. Thank you to those of you who participated online; we appreciate your comments and your time. This session is now closed.

The PowerPoint developed by this breakout has been uploaded; see attachments tab above.