



Writing Big Ideas for Biliteracy Units (BUF)

Part 2:

Focus on Science Standards

When you are developing a biliteracy unit (BUF), you need to **begin with your state academic standards** or the **common core standards**. For more information on how to look at standards and create big ideas, see **Writing Big Ideas for Biliteracy Units, Part 1 Introduction**.

If you teach in a state that has adopted the Next Generation Science Standards, the work in creating big ideas has already been done for you. The **Disciplinary Core Ideas** (the orange box) and the **Crosscutting Concepts** (green box) are already written as big ideas, and can be used with the BUF. The Next Generation Science Standards (NGSS) are available here:
<http://standards.nsta.org/AccessStandardsByTopic.aspx>

Example number 2: (Example # 1 can be found in **Writing Big Ideas for Biliteracy Units, Part 1: Introduction**.)

Let's go through the thinking and refining process with another big idea:
I want my students to understand that there are different types of weather in different places.

Climate, rather than weather, is often part of state academic standards. When you are writing big ideas, it is very important to think through the vocabulary and language structures you use, because the big idea helps to determine the vocabulary and sentence structures that are the focus of instruction during the oracy building portion of the BUF. (For this reason, it is important to write the big ideas in the language of instruction. For example, if science is taught in Spanish, it would be important to write the science big ideas in Spanish.)

If we want our students to use academic language in both English and Spanish correctly, we need to use it correctly. Although weather (*tiempo*, in Spanish) and climate (in Spanish, *clima*) may be used interchangeably in informal, everyday speech, in the academic context they refer to two different things. Weather is what is going on today, and can change by the hour: It's raining; it's cold; it's sunny, etc. Climate refers to an overall meteorological description, and is associated with place: arctic, temperate, tropical, etc. So, in looking at state standards, the big idea would become:

I want my students to understand that there are different types of climate in different places.

It fits into the sentence frame (I want my students to understand that...). Is it a detail or a big idea? Can we give an example?

For example, it is cold year round near the poles and warm year round near the equator.

We can give an example, so it is a big idea.

Because this is a unit for early elementary (K-2), it is probably important to teach about weather as well. So, we will want to include a second, related big idea:

I want my students to understand that each climate zone includes a variety of weather patterns.

And here is the “For example...” of this big idea:

For example, while it is always warm near the equator, it may be sunny and warm or rainy and warm, depending on the season.

So this unit would have two, related big ideas:

I want my students to understand that there are different types of climate in different places.

I want my students to understand that each climate zone includes a variety of weather patterns.

I would hope the teacher would teach to these big ideas by looking at a variety of climate zones, and studying the weather in at least two of them.

Some other big ideas related to climate and weather:

I want my students to understand that human life is affected by climate and weather.

Example number 3

I want my students to understand that the earth rotates on an axis and also circles the sun.

While this can be found in many state standards and can complete the sentence prompt, it is difficult to come up with a, “For example...” So, this is a detail. Now, this is a very important detail, and one that can be hard for young students to grasp, so we have to ask the next question,

“So what?”

We haven’t really discussed the “So what?” question yet, so let’s take a look at it. Yes, students need to know this detail, but why? And if you, and more importantly the students, don’t know why they are learning it, it probably won’t be fully comprehended. I can see two different big ideas, depending on the state standards:

I want my students to understand that in our solar system, planets and moons move in two ways: rotation and revolution.

This would be the big idea if the unit were focused on how things in space move. By studying all planets and moons in our solar system (or at least several, not just earth), students are brought to the deeper understanding that this is how many things in our solar system move. It is not a detail, but a big idea that is more widely applicable.

OR

I want my students to understand that the rotation, revolution, and tilt of the earth affect the earth in specific ways.

This would be the big idea to use if the standards were more focused on how life on earth is affected by the rotation and revolution of the earth. And, if you are going to discuss how the earth's revolution causes seasons, you need to teach students about the earth's tilt.

Writing Big Ideas for Biliteracy Units, Parts 1 and 2 have focused on writing big ideas in Social Studies and Science. For information on writing integrated units of study with language arts, see **Writing Big Ideas for Biliteracy Units, Part 3: Integrating Language Arts Standards in the Content Areas.**