

Serendipity in Curriculum Design . . . developing quality themes for Project-Based Learning units.

"Focus on standards *blindly*. . . and do so with brutal efficiency".

That was one of the 12 easy steps recommended for killing a learner's curiosity in a blog post I found recently¹.

As you know, most professional development and curriculum design consultants will tell you to always start with the standards when beginning to develop a PBL unit.



My contention is that you should NOT begin with the standards! They *are* very important, and we certainly do ensure that they are learned by all students. Notice that I said that the standards are "learned by", not "taught to" the students. In fact, using the 21st Century Schools² method for designing and delivering PBL will actually have your students learning at higher levels, and a great by-product will be higher test scores!

Before you get out the flamethrowers hear me out!

Why do I say that you should not begin with the standards? The standards are very limiting in that regard. If you begin with the standards you will necessarily miss out on some incredible ideas. And you will forego many excellent opportunities to create rich curricular experiences for your students. By focusing only on the standards as you begin to develop curriculum you are, in effect, putting on a set of blinders. And the result is that you will have stopped short of designing a truly extraordinary learning event!

Think for a moment about what "standards" are – they are the **minimum acceptable** bar. Is that what you really want to aim for, the minimum? Let's reach for the sky instead, and in doing so you will discover a much easier way to teach, not just the standards, but beyond. And, it's a lot more fun for you and the students.

I am not meaning to insult teachers here at all. I know how much you are pounded about those test scores, and how stressed you are (and your students as well). You have been put

¹ [How to kill learner curiosity in 12 easy steps](#), by Terry Heick

² www.21stCenturySchools.com

into an impossible situation; constant pressure to make the students perform, but without the structures and conditions which support authentic learning.

There is hope; high quality project-based learning will eliminate many of your troubles. Students will become motivated, and behavior problems will diminish greatly, if not virtually disappear. PBL curriculum makes it much easier to teach more standards – painlessly – because you aren't marching through a boring list of facts and skills at breakneck speed.

If students are to learn, then they must understand. The more connections we can make for our students the better they will understand and remember, i.e., learn. We make meaning for students when we design and implement an integrated, interdisciplinary curriculum. PBL is the perfect vehicle.

PBL also supports the recent emphasis on developing skills such as creativity, problem-solving, collaboration, etc.; designed correctly, your projects will automatically incorporate reading and writing skills for fiction and non-fiction. No need for "Non-fiction Fridays!" How ridiculous that is! Talk about a fragmented curriculum! I cannot imagine any subject for which there are not both fiction and non-fiction resources.

Quality PBL curriculum is a way to teach beyond the standards, plus a way to make teaching and learning joyful once more.

There is a time to review the standards, to determine exactly which standards will be learned in each unit, and we have processes to ensure that all required standards are learned; but looking at the standards is not the first thing you should do. You already know, in general, what students are to learn in your grade level or course. So begin with selecting a theme and purpose for your quality PBL unit.

How does one go about selecting unit themes? Ideas for PBL units can come from anywhere –

- **An event** – Hurricane Katrina, the Gulf Oil Spill, a presidential election.
- **An issue** – Homelessness, the Economy, Civil Rights
- **A magazine article or cover** – "Stem Cells – How far will we go?", *National Geographic*; "America's Prison Generation", *Newsweek*. "America's Music – from Yankee Doodle to Hip Hop", *U. S. News*
- **Short story** – "The Celebrated Jumping Frog of Calaveras County"
- **Mass Media** - Your idea could be sparked by a television show or commercial, a song, or a film.
- **A personal passion** or interest (yours or the students') – one excellent PBL unit I heard about was based upon the study of Forensics (student request – the teacher knew

nothing about it, but learned with her students); other teachers may be passionate about Shakespeare, or an Environmental Issue

- **An object** – I once saw a very rigorous, interesting, high quality interdisciplinary unit created as a result of finding a shoe lodged in a pile of trash in a river!
- **Serendipity.** How does that happen?

Notice that not one of the above was derived from the CCSS or from a textbook. What they represent is curriculum that is Relevant, Rigorous and Real World! That list barely scratches the surface of what is possible. Research has shown that the main reasons students drop out of school are boredom or finding school irrelevant. We can fix that – easily!

An example of Serendipitous Curriculum Design

The other day I decided to find out what special days take place during the month of May; I wanted to list them in my newsletter. There are several web sites that list interesting special days and monthly themes.



May is *National Barbecue Month, National Bike Month, National Salad Month* and several others.

And in May we can celebrate *Mother Goose Day, Star Wars Day, World Red Cross Day* and many more.

One of these sites is *Holiday Insights*³, where I discovered *Frog Jumping Day* which is celebrated on May 13.

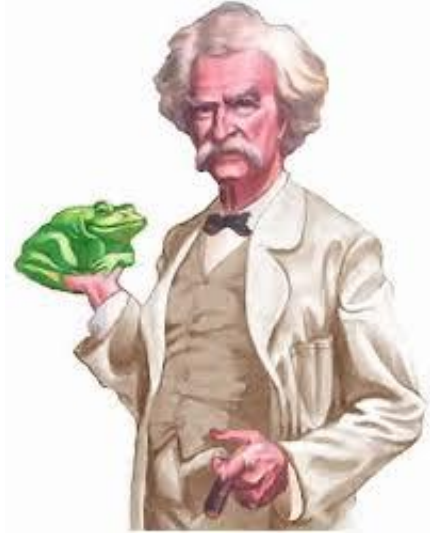
I thought that *Frog Jumping Day* sounded pretty interesting, and in no time at all I had generated all kinds of possibilities and identified numerous, excellent resources for creating a quality project that is Relevant, Real World and Rigorous.

³ www.HolidayInsights.com

First of all, I learned that *Frog Jumping Day* (an annual event since 1928) is based upon Mark Twain's first short story, "The Celebrated Jumping Frog of Calaveras County"⁴.

The story is online, and I found several excellent online study guides as well as a number of audio recordings. It is also a great "read aloud", but you will need some practice first in order to master the pronunciation:

"He ketch'd a frog one day, and took him home, and said he cal'klated to edercate him; and so he never done nothing for three months but set in his back yard and learn that frog to jump. And you bet you he did learn him, too."



FIRST, brainstorm your theme – in this example it is *Frog Jumping Day*. Brainstorming means that any and all ideas need to be accepted (for the time being). You can work alone, but it is great if a few other people participate in this process.

Begin by thinking about connections among the disciplines (even if you do not teach math or literature, let the ideas flow); what kinds of activities or projects come to mind? What are some possibilities for a culminating event? What resources are you aware of that would be excellent to use (either by you or the students)? How can you incorporate technologies? What can you build into the project that will help students develop 21st century skills? What are some experiences you can plan for the students that help them develop 21st century literacies?⁵ Who do you know that has some kind of related expertise? What are some possibilities for Big Questions that will guide students through this experience?

Once you have brainstormed you will discover that you have come up with enough ideas for a multi-year project! You will also realize that you are going in an entirely different – and better – direction than what you had in mind when you began! Now, think about how many weeks are available to spend on the project. Finally, look over your brainstorm results and narrow the project back down to where you really want to focus within your time frame.

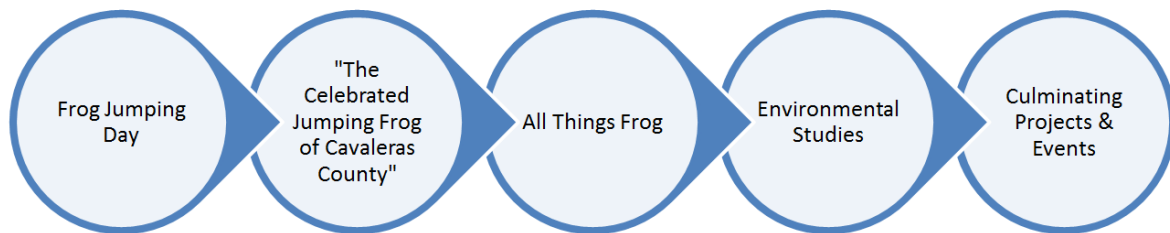
NOW, let's take a look at those standards. You will be amazed when you discover that you have addressed anywhere from 50% to 100% of the standards in each discipline! As you scan the standards you will find a few that you had not considered but that would be a perfect fit – add them into your plan.

⁴ ["The Celebrated Jumping Frog of Calaveras County"](#)⁴.

⁵ Please refer to our two [compass roses](#): *Critical Attributes of 21st Century Education*, and *Multiple Literacies for the 21st Century*. We use these as a "quick glance guide" when developing a curriculum unit. Also on this page are the *7 Survival Skills for the 21st Century*, from Tony Wagner, Harvard University.

The Basic Process - The graphic below is a very simple illustration of how we begin with a particular event, *Frog Jumping Day*, using it as an entry point into a larger PBL Unit. It is introduced to students with a reading of “The Celebrated Jumping Frog of Calaveras County”. You should read it aloud to your class or play one of the online audio recordings of the story.

This leads naturally into an exploration of “all things frog”. This, then, is the avenue to a broader project within Environmental Studies, or you could go the route of Literature, Writing and History. Upon completion of the unit students will participate in a Culminating Project/Event which serves as a celebration and public demonstration of their learning.



In another post in this series we will review the process of designing down the unit.

NOTES about PBL implementation -

1. **Not every discipline is in every project** - The goal is not to include every single discipline in every single unit! Do not force-fit anything. Many PBL themes tend to lean toward either Social Studies or Science, while it is easy to integrate Language Arts, the Arts and Technologies everywhere.

Math is probably the most difficult subject to integrate into PBL units, although there are excellent examples of PBL projects based upon math! All you have to do is decide which road to take!



2. **Content Courses** - Some subjects will still need to be taught as content-specific courses, and you can make connections when possible to the PBL unit. You can also incorporate PBL into this single course and use the classroom strategies we use in designing units for PBL.

3. **Mini-lessons** – these are basic, discreet skills, content knowledge or concepts that are taught by direct instruction within the context of the PBL unit. Usually a mini-lesson of 10-15 minutes is sufficient. This is where you are introducing a new skill or concept or reinforcing with extra support as needed. Example mini-lessons include - how to calculate a percentage, what is long division, what are adverbs. Students can also acquire or strengthen these skills using various apps on their tablet computers; there are many software programs available that will track each student's competence on these skills, and Kahn Academy also will have lessons the students can access at their convenience. This is personalized learning!
4. **Not all day, every day** - Project-Based Learning does not mean that all students are involved in projects and hands-on activities all day, every day. A later post will focus on scheduling.

Frog Jumping Day is May 13.



Whenever I begin brainstorming and researching a unit theme I create an online database. I like to use Weebly⁶. You may access my *Frog Jumping Day* web site⁷ which includes:

- A guide to brainstorming a PBL unit
- Recommendations on gathering resources for your classroom,
- A Resource Bank – some resources are related to the story, some are related to frogs, while other resources address connecting many disciplines,
- Big Questions which will guide the students through the unit,
- Suggested activities, projects and culminating events,
- Collaborative Global Classroom Project ideas,
- Recommendations for locating outside experts and what they can contribute,
- Multiple examples of how to meaningfully integrate technologies at high levels,
- Service Learning project ideas, and
- Examples of specific connections to many disciplines.

⁶ www.Weebly.com – Teachers can create free web sites with blogs, and can set it up so that each student also has their own web site and blog; you can also create a way for students to submit assignments digitally. The pages can be password protected for a very low fee. I like Weebly because it is very user-friendly, it has many beautiful templates, and access to an excellent Image Library, and you can build your own.

⁷ [Frog Jumping Day](#) on Weebly

There is too much information to include in this post, so it is located on my *Frog Jumping Day*⁸ Weebly, along with sub-pages for *PBL Planning - a Frog Unit*⁹ and *Frog Unit Resources*.¹⁰ These resources and examples range from PK-16.

After reviewing the resources listed above, and adding your ideas, you will be able to answer the following questions:



1. Why should we study frogs, anyway?
2. How do I locate the best resources for a powerful unit?
3. What will inspire my students to want to learn about this?
4. What is a good introduction/entry to this unit?
5. What should my unit encompass - which disciplines, which skills, which content?
6. How can I be sure my students will learn the CCSS through this project?
7. What in the world is *Frog Jumping Day*, and why should we care?
8. How can I make authentic connections to the community?
9. How can I assess student learning?
10. How do I ensure Relevance, Rigor and Real World connections?

⁸ Ibid.

⁹ PBL Planning a Frog Unit - <http://curriculum21csi.weebly.com/pbl-unit---frogs.html>

¹⁰ Frog Unit Resources - <http://curriculum21csi.weebly.com/frog-resources.html>

Connections to the disciplines – Frog Jumping Day

As you move forward in planning your PBL unit you will find many connections to all the disciplines. Here is a small sample:

Language Arts - writing skills and styles, literature, language and history as well as many specific language arts skills such as simile, metaphor, vocabulary, etc. This project could introduce students to the works of Mark Twain as well as other writers of his era; these fictional writings provide insight into the sociohistorical context of the times, which connects to history, cultural studies, geography and more.

Older students could also examine the ongoing controversy, beginning in 1885 and still ongoing, regarding how Mark Twain's books went from being a classic that all children should read to being banned in many libraries and school districts.¹¹

Cultural Studies and Literature related to the story, and to frogs, are plentiful - from Aesop's Tales to Hans Christian Anderson, the Grimm Brothers and Beatrix Potter, as well as tales from various cultures (and through time).

Environmental Studies - The focus could be scientific as in Biology, or for younger students, the Animal Kingdom. All of these could be integrated in a unit focusing on Environmental Studies - ecosystems and human impact on animals as evidenced, for example, by mutations caused by pollution.

A word of wisdom about Environmental Studies and/or developing Ecoliteracy – for the younger children stay focused on the beauty and wonder of nature. Save the crises for older students. There are all kinds of wonderful things to do with the younger children – from studying the life cycle of a frog to exploring their schoolyard or neighborhood for animals. Create an Edible Schoolyard! Let the students plan and create a special habitat on the schoolyard for frogs, or birds or butterflies. See my blog post on Ecoliteracy¹² for a list of “must have” books for “green teachers” of younger students.

¹¹ The Adventures of Huckleberry Finn – controversy.

<http://www.pbs.org/wgbh/cultureshock/flashpoints/literature/huck.html>

¹² Ecoliteracy blog post - <http://21stcenturyschoolsnews.weebly.com/3/post/2013/08/ecoliteracy-resources.html>

Global Competence – This is one of the critical *Multiple Literacies for the 21st Century*¹³. Global competence is “the capacity and disposition to understand and act on issues of global significance.”¹⁴ First, students should be participating in an active, relevant collaboration with students in other cultures; not just pen pals, but collaborative research, or collaborative creations of products such as an online database with their research findings, a film, . . .

Another very good activity here is something I did with my fifth graders once. We were required to teach the taxonomy of the animal kingdom. I had just started at this school; the other science teacher gave me a packet of old, yellowed, BORING transparencies so that I could lecture and explain every level of the taxonomy, beginning with the amazing amoeba. I said to myself, I don’t think so! School and learning are supposed to be exciting and interesting, not torture and mind-numbing. So I immediately and feverishly created an interdisciplinary unit called Kingdom Animalia.

My trip to the university and the public libraries rendered about 150 books, including myths about animals from every continent. I required the students to read at least three myths, legends or folklore from each continent. That is a powerful way to develop global competencies.

You could do the same with this Frogs Project – frogs are everywhere, in every culture and religion – from ancient cultures to present day popular culture. After reading and discussing all these stories the students can develop a rubric, or criteria, for what makes a good myth, etc. Then ask them to use their rubric to create their own myth, legend or folk tale. Illustrate and publish them!



Possible Projects and Culminating Events -

1. Build a Frog Pond
2. Conduct a “Save the Frogs” campaign
3. Student Film Festival for the community
4. Service learning project – Create an Audio Library

For details on each of the above projects please go to the *Frog PBL* page on Weebly listed in the footnotes.

¹³ See our compass roses, *Multiple Literacies and Critical Attributes of 21st Century Education*, <http://21stcenturyschoolsinternational.weebly.com/compass.html>

¹⁴ Asia Society, <http://asiasociety.org/globalcompetence>

That's Serendipity

Would I have thought of these possibilities if I simply looked at the standards? No! But, after exploring and brainstorming possibilities using *Frog Jumping Day* as a starting point (or a jumping off place), I can easily see where many standards can be integrated meaningfully!

So don't rule out serendipity - be creative, and don't limit yourself to just the standards. Our students deserve more than that!

In my next post we will look at specific Culminating Events and see how these fully and seamlessly integrate the standards, 21st century skills, multiple literacies, technologies and authentic assessments. Meanwhile, you can start thinking about a theme for a quality PBL unit and begin brainstorming!

Finally, I wanted to share my Pensacola frogs with you!

Just for fun – listen to our Pensacola, Florida Frogs



We lived in Pensacola, Florida for three years, very close to the water on Perdido Bay. Click the image to listen to our recording of what sounded like thousands of frogs! It was VERY LOUD every evening at dusk.

I am sure there were thousands in the thick woods located between our fence and the bay, since we could see hundreds in the bushes growing next to the patio. They were very small, not as big as the end of your thumb.

One particular little creature made a very loud barking sound - at first we thought someone's toy Chihuahua had gotten into the back yard. For days we would hear the loud barking, go outside looking for a dog and find no dog!

We finally discovered that it was a tiny frog sitting in the track space above our sliding glass patio door! The space was so small that I could not have put my little finger into it. Those tiny creatures can make very loud noises! Sometimes he jumped down onto us as we stood there peering at him! My 18-month-old grandson got a kick out of how I moved the day that little frog suddenly jumped onto my face! They're tiny, they're loud and they're fast!

Really, who doesn't love frogs?

Bibliography

[How to kill learner curiosity in 12 easy steps](#), by Terry Heick

[“The Celebrated Jumping Frog of Calaveras County”](#)

[Holiday Insights](#)

[Frog Jumping Day page](#)

[Frogs – Planning the PBL Experience](#)

[Frog Resources](#)

[Ecoliteracy blog post – must have books for teachers](#)
