

## Spelling SCience in action (Part 1): Inquiry-led teaching @ the Western Academy of Beijing

Background: Blair Zachary is an elementary school teacher at the Western Academy of Beijing. He was introduced to structured word inquiry when he came to the two-day workshop Lyn Anderson and I co-led at the International School of Kuala Lumpur in February 2014. He contacted me a few times afterwards, and I got to Zoom (video conference) into his classroom. Blair then returned with 6 colleagues to the 2-day workshop I just ran there this past February.

Soon after this second workshop, I received an email from Blair with a question about the structure of the word <science>. I am sharing the correspondence that followed as it's such a great illustration of the kind of generative learning that grows as teachers begin the process of studying spelling, as he would write it -- SCientifically!

With minor edits, here's the email correspondence. First from Blair:

Question for ya: is the root of science <sci> ?

We are doing a unit of inquiry that is geology centred right now. Volcanoes, earthquakes, erosion, weathering, etc. (basically changing of landforms being a continual process). Know the <rupt> investigation might be fun if you had the time and interest.

Hey Blair,

Wish I had more time, and often will, but let me offer a couple of quick things...

I think you mean "Is <sci> the BASE of <science>?"

If it is, the word sum would be:

sci + ence --> science

Here is what Etymonline offers for the ROOT of the word <science>:

[This information from Etymonline is quoted in Blair's email on the next page.]

Now for your hypothesis to stand up, you'll have to do the following:

1. Find at least one other word that can be analyzed with a coherent word sum showing <sci> fixed to other established morphemes. (Try the [Word Searcher](#))
2. Show that these words share the same Latin root 'scire' for "to know"

Once you work at that, I'll be happy to show you a great film on this word family!

Would love to investigate <rupt> with you. I'm heading off for another trip next week and am way behind.

Perhaps you can share my email above with your class and work together to see what you find. I'd love to see what you discover. We could share the investigation on Real Spellers!

More soon!

Pete

Hi Pete,

Just investigated <sci> with a student of mine.....others busy working! Two laptops better than one.....and a young brain always seems to help out!

Here is what we found:

Our hypothesis is that <sci> is the base of <science>. For that to work then the word sum would be:

**sci** + ence --> **science**

We checked out etymonline.com and found:

**science (n.)**  mid-14c., "what is known, knowledge (of something) acquired by study; information;" also "assurance of knowledge, certitude, certainty," from Old French *science* "knowledge, learning, application; corpus of human knowledge" (12c.), from Latin *scientia* "knowledge, a knowing; expertness," from *sciens* (genitive *scientis*) "intelligent, skilled," present participle of *scire* "to know," probably originally "to separate one thing from another, to distinguish," related to *scindere* "to cut, divide," from PIE root *\*skei-* "to cut, to split" (cognates: Greek *skhizein* "to split, rend, cleave," Gothic *skaidan*, Old English *sceadan* "to divide, separate;" see [shed](#) (v.)).

We then found other words with <sci> that could be proven with word sums. They are as follows:

con + **sci** + ence --> **conscience**

from *com-* "with," or "thoroughly" (see [com-](#)) + *scire* "to know"

pre + **sci** + ence --> **prescience**

from Latin *prae* "before" (see [pre-](#)) + *scire* "to know"

ne + **sci** + ent --> **nescient**

from present participle of *nescire* "not to know, to be ignorant," from *ne* "not" + *scire* "to know"

**plebe**/+ i + **sci**/ + ite --> **plebiscite**

inchoative of *scire* "to know"

This last word sum is a stretch that's for sure!!!!!!  
Guaranteed to have error(s)!

Have bolded <plebe> as well as we think it might be another base.

We are not confident about <e> becoming <i> but we think the rest works! Please fix as necessary!!!!

Made a quick matrix [from the Mini-Matrix-Maker] as well.  
Please see below:

		con ne pre	<b>sci</b> <i>Latin scire "to know"</i>	ence ent ite
plebe	i			

**Word sums (5)**

con + sci + ence --> conscience

sci + ence --> science

pre + sci + ence --> prescience

ne + sci + ent --> nescient

plebe + i + sci + ite --> plebiscite

Now for the real reason I asked about <sci>! Was trying to come up with a "cool" logo for the work we are doing in our classroom with words, based on what I have learned from you at the workshops and via other media. Was thinking that this could work:

word<SCI>ence or.... word **SC**Ience or....  
word**SC**Ience

Ever seen this done before? word**SC**Ientists sounded better to me than word detectives, word nerds, etc. etc.

Would love to see a copy of the film, if not for me then for the student who spent the last hour with me!

Let's set up a time for the <rupt> investigation. Wondering if <plouse> and <plode> would be good too.

Blair

### What can we draw from this correspondence?

in terms of understandings we can explore about English orthography and how we can investigate our own spelling questions. This correspondence offers an embarrassment of riches.

With the wise council of my colleague and friend Gail Venable, I'm going to share just a few initial observations here. I have much more that I hope to address in a part 2 follow-up document. This also offers the opportunity for others in the community to share ideas in the Real Spellers comment thread so that we can expand the participants and ideas in this discussion.

### What did Blair need from me?

Consider the understanding about this family of words displayed in Blair's second email. Now consider how little of that content was presented in my response. All I offered was structure to his scientific inquiry. I did not confirm or reject his hypothesis. I gave him what I thought he needed so that he and his students could do that for themselves.

On reflection, I see three aspects to my response:

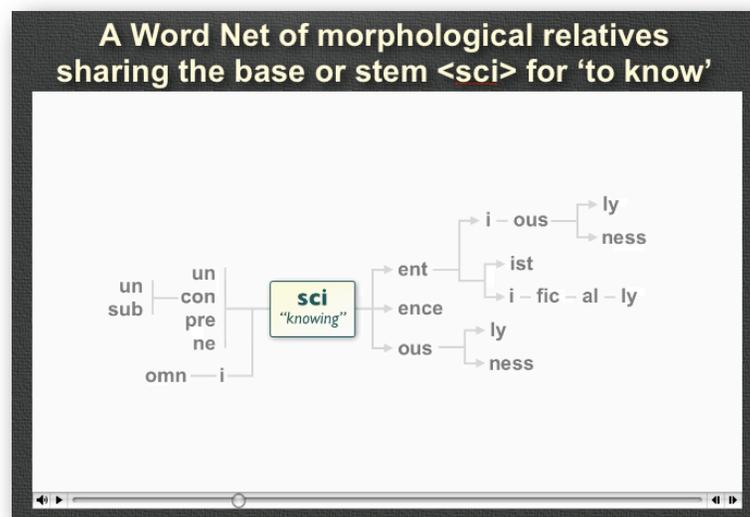
- 1) I re-worded the question in a more linguistically precise way.
- 2) I show what would be required to safely conclude that their hypothesis stands up to the evidence, or that they have to reject it.
- 3) I do my best to AVOID giving specific "answers".

One idea I hope to follow-up on in a Part 2 is to use this story as way to compare and contrast what can be called *inquiry-led learning* and *teacher-led inquiry*.

Since Blair did not know the answer to his question, he could not do teacher-led inquiry. He was in a much richer position to begin an inquiry-led learning experience with his students. Fortunately, Blair had enough understanding that he just needed a brief reminder of the scientific process involved in learning from his own question.

As I promised, once Blair's crew shared their research on their question, I shared [this link](#) to a Real Spelling movie of a word net for members of the morphological family that include <science> and many of the words Blair and

his students uncovered. I'm so glad I didn't share that video in my first response so they could discover so much of it on their own! A still of that word net film is below - but [watch the film](#) for much more information including phonological information about this family.



**What's next? New questions of course!**

- **The best questions provoke more questions -- from <science> to <plebiscite>**

One new challenge Blair's crew has presented for us is to understand the analysis of the word <plebiscite>. The good thing is that they have just practiced the process for investigating such questions. A friend has suggested to me that there might be an extra interesting wrinkle in the story of the history, spelling and structure of this word that I have not yet considered. Excellent! Perhaps readers will offer some thoughts on that in the comments section.

- **Have I "answered" Blair's question about <science>?**

It may seem like I have stated that Blair and his crew have found *the* "correct" analysis of <sci> as a bound base for <science>. If you re-read my response, however, you should find that I have not referred to <sci> as the bound base of <science> myself. Why might that be?

Thanks to Blair and his team for sparking such a rich investigation with such a seemingly simple hypothesis!

For now I'll just leave you with some links to resources that might be useful for you to study this word family for yourself.

#### **Some resources for this and upcoming investigations**

**"Structure and Meaning Test"** Click [here](#) for a Real Spellers post with resources and a video of a classroom lesson targeting this key concept.

**Word Microscope:** This is a computer tool that guides structured word inquiry investigations. See a video showing this tool in operation [here](#).

- See a Real Spellers post using this tool to investigate the word <investigate> [here](#).
- See a Real Spellers post that used this tool in an investigation of the word <condiment> that arrived at a surprising base [here](#).

**Mini-Matri-Maker:** Click [here](#) for the tool Blair's class used to create their matrix from from word sums.

**Real Spelling Spellinars & LEXinars:** The richest way I can think of to deepen your orthographic understanding is to sign up to take advantage of these amazing on-line courses from the comfort of your own home.

Peter Bowers, Feb. 3, 2015