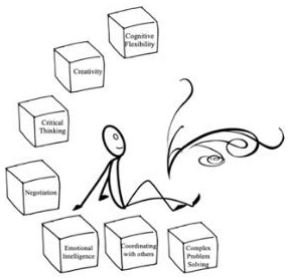


Scaffolding Academic Language with Hieroglyphics (Primary)

Donna Lee Fields, Ph.D.

theory behind scaffold...

Educators and owners of academies who claim to teach critical thinking, usually assume that it is a skill similar to riding a bicycle – once you master the dynamic you don't have to dedicate an inordinate amount of time practicing, just enjoying the benefits. That might be true if we were referring to day-to-day, minute-by-minute thinking, which comes effortlessly and endlessly. The concept of *critical* thinking, however, is more complex. To arrive at any complexity of thinking, the brain has to put a lot of wheels to into motion.

When giving students opportunities to widen their skills to think critically, we cannot separate the techniques from content (the 'domain knowledge'). For every subject, issue or challenge, there is a separate and different technique that needs to be used to help the mind expand and consider the issue from all sides. This is crucial for educators to know and appreciate because for our students to be able to be skilled in lateral thinking, they need to learn techniques that are tied to specific content.* So, for our students to be divergent and efficient thinkers, they need to have a warehouse of techniques available to use the appropriate one, depending on the situation.

This scaffold is one of many of these techniques. With it, we stimulate critical thinking through visual clues, with an adaption of the ancient Egyptian hieroglyphics. Using images is a powerful learning tool for all students (studies show that using an image with text doubles learning). Many times, visual learners are often overlooked in favour of linguistic learning, so this activity will excite and engage them more deeply.

To successfully decipher the combination of images and textual puzzles, students need to tap into inferential and deductive reasoning. They examine images and decode how they are linked phonetically. When spoken aloud, students will realise that they are decoding the academic language that will appear in their next unit of study.

As in all scaffolding activities, we encourage you not to get caught in the loop of believing that scaffolding activities steal time from the principal lesson. In fact, they save you time and energy as students will be able to assimilate new information more easily and more fluidly, usually through reciprocal teaching, which is, according to the studies of John Hattie, has one of the highest influences on learning. Further, by taking the time to begin with scaffolds, you'll have brought a bit of lightness to classwork, and so you'll see your students work with more energy and enthusiasm.

- *Willingham, Daniel T. (Summer, 2007). 'Critical Thinking: Why is it so hard to teach?'. American Educator.

step by step...

Note: Instead of targeting one specific unit, this scaffold encompasses the academic language of a set of units. In other words, the scaffold highlights the vocabulary and terms that appear in various units of - in this case - the study of natural sciences. It's an essential to put the words in context, so there are two parts to this scaffold.

Part I

1. Choose 10-15 academic terms from an overview of the academic language found in the next few units of your students' resource.

Example of academic language from a Natural Science book that spans a school year:

- brain
- cortex
- endorphin
- eye drops
- nauseous
- hypothesis
- carbohydrates
- control
- ecology
- meteorology
- phenomenon
- experimentation
- organism
- observation
- thermodynamics

2. To prepare the activity, say each of the terms aloud, slowly, and write out the sounds and syllables you hear yourself saying. (Download this mp4 to give you an idea on how to do this.)

3. As you hear yourself vocalise the sounds, think of images that match parts of these vocalisations. Connect images with a plus (+) or minus (-) sign, and, when needed, any letters that are necessary to complete the term. (See example below.)

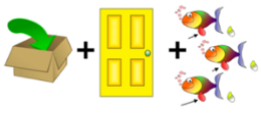
Example: From the list of vocabulary, you choose 'endorphins'. You say 'endorphins' aloud, very slowly and deliberately, and it may sound like this:

in + door + fins

You find images of:

'in'  'door'  'fins' 

On the worksheet you prepare for your students, you put them together in the following way:



Your students take turns vocalising the images, negotiate meaning, and eventually pronounce them so as to intuit that the term the images represent, in this case: endorphins.

4. *two other examples:* 

(eye drops, brain.)

(Download this PPT with examples of hieroglyphs from many different subjects.)

5. *Important*: As this may be the first time students see these terms, at some point in the activity (towards the end) we need make visible the of academic terms we've coded into hieroglyphs. They'll need this to connect their vocalisations of the images to a concrete term they'll see in their reading
6. Students work in pairs (or groups of three) to decipher the hieroglyphs.
7. Groups who finish early use the academic language they have just deciphered to make sentences. (*Example: My father uses eye drops when his eyes are dry.).*

Part II

a. On a separate worksheet that you'll have prepared, students now work in different pairs to choose the appropriate definition of the academic terms that they've just deciphered. You'll give them a clue that refers to the images in the hieroglyphs, so they are more likely to match the definitions to the appropriate academic terms. To encourage them to process the definition, they justify their choices by elucidating the connection of the image to the term, and then paraphrase the definition. (See examples below.)

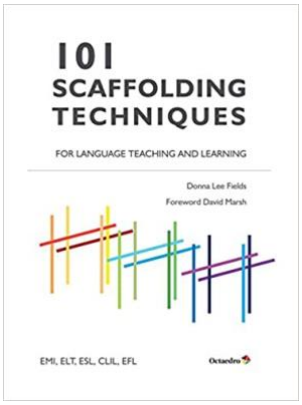
example:

What is the academic term?	***Definition and Clues***	***Our justification for choosing this academic term:***
endorphin	• a peptide that reduces pain and blocks emotions • creatures in the sea uses this to move forward.	One of the images shows fish. Fish use fins to move forward. 'Fins' is a part of the word 'endorphins.' The effect of endorphins is that there is less pain and emotion.
brain	• a mass of nerve tissue in the head • this creature makes honey	One of the images shows a bee. Bees make honey. 'Bee' is a part of the word 'brain', which has nerve tissue.
	etc.	etc.

c) *Reflection:* Students write the answers to the following questions from the Question Continuum. (*Remember, some questions reflect content and others reflect methodology, thus augmenting self-efficacy.)*

- Yes/No — Could you decipher all the hieroglyphs?
- Which — Which hieroglyphs were the most challenging?
- Who — Who do you know who likes to decipher codes?
- When — When do you feel nauseous?
- Where — Where is the cortex?
- What — What are endorphins?
- How — How did you decipher the hieroglyphs?
- Why — Why is it important to be familiar with academic language?
- What if — What if you could name a part of the grey matter in the brain? What would you name it and why?

find more scaffolds here...



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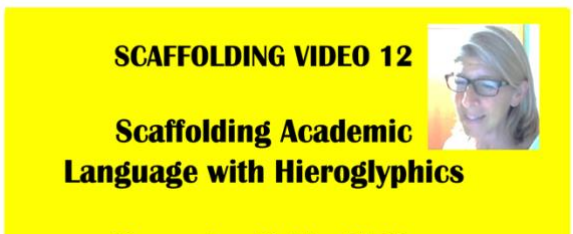
transcript of video explanation…



ngmagic.com

transcript of video explanation...

Hi, I'm Donna Fields and welcome to CLIL Scaffolding 12. It's a series of webinars designed to help give you support for using scaffolding in your lessons. Today we're going to use scaffolding technique #132.

One hundred and one more of these techniques can be found in my book: *101 Scaffolding Techniques for Language Teaching and Learning* that has also been translated into Spanish.

Scaffolding is about giving just enough support to students when they are struggling so that they can continue, afterwards, on their own.

Today's objective is to scaffold academic terms and phrases through a critical thinking strategy. I'm going to show you in a primary and secondary lesson and you can find more examples, plus pre-school and university-level examples, at my webpage.

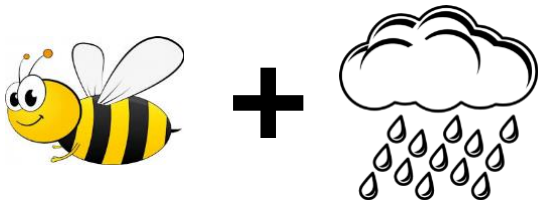
Let's start with a secondary science lesson. We want our students to become familiar with scientific terms they'll be using during the upcoming unit. Let's make it fun, give them one more critical thinking strategy that they can put in their toolbox of educational skills. So, what do we do?

We break down the words, terms and phrases and find images that match the separated syllables.

For instance, the first page of the unit has to do with the brain. Let's start with that word to ease into this technique. Let's break down the word into two syllables to make things more fun:

bee/rain

What images would represent these two parts of the one-syllable word? Well, now that's it's broken into two syllables, it's easy:



You can begin with that with your students, they'll see how fun this is and keep going.
Let's try a two-syllable word: cortex. If we break down this word, we see that, when said slowly, it is core....tex. What images would use to represent these two syllables?

Well, 'core' can be symbolised by the 'core' of an apple. The second part 'tex' can be represented by the state of Texas, which is familiar to people even outside of the United States because of its distinctive shape, so we include a map of Texas.

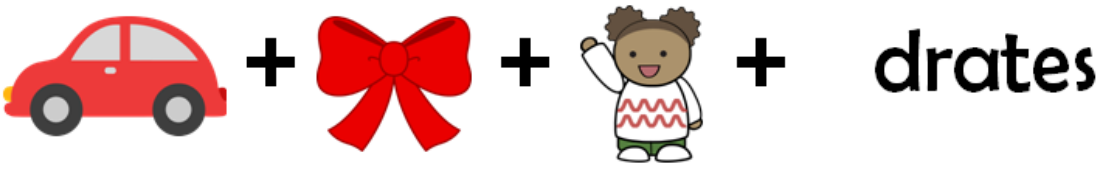
But, we need to get rid of the second part of the name 'as'. That's easy. we just use the minus sign and so the finished hieroglyph is:

Let's try it with a primary lesson on nutrition.

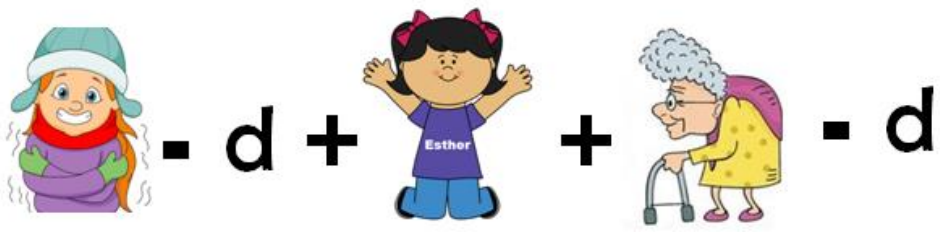
One of the words your students are going to need to read and say repeatedly is: carbohydrates

How can we break this down and make it visual?
car...bo...hy...drates

- The first syllable is easy: car
- The second syllable sounds like the bow on a present
- For the third syllable, we can put a person waving 'hi!'
- The last part of the word is a bit difficult, so we just use the letters themselves. If any of you have a better idea, please let me know!



Let's use the word 'cold' for the first part, subtract the 'd', include an image of a girl named 'Esther' then plus an old woman, subtract the 'd', and we have:
cholesterol!!!



And that's it! Another simple scaffolding technique that I hope you can use in your classes. I look forward to any comments you have.

You can find me at:

https://scaffoldingmagic.com/

and

Linkedin
Pinterest
Facebook
Instagram
Tiktok (scaffoldingscaffolds)

So all you SUPER TEACHERS out there, I look forward to seeing you next time and have fun in your classes! Bye!

*Willingham, Daniel T. (Summer, 2007). 'Critical Thinking: Why is it so hard to teach?'. American Educator.