

Drawing from Life

Exploring how drawing
can enhance your
science & SciComm

Bethann G. Merkle

Artist, photojournalist & SciComm coach

www.commnatural.com

[@commnatural](#)



This work is licensed under a [Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License](https://creativecommons.org/licenses/by-nc-nd/4.0/). You're welcome to use it, but please provide credit, don't modify the content, and don't try to sell it.

Want to know precisely what this license authorizes? [Click here for details.](#)

History of drawing & science are closely intertwined

"Views of a Foetus in the Womb" licensed under
Public domain via Wikimedia Commons.

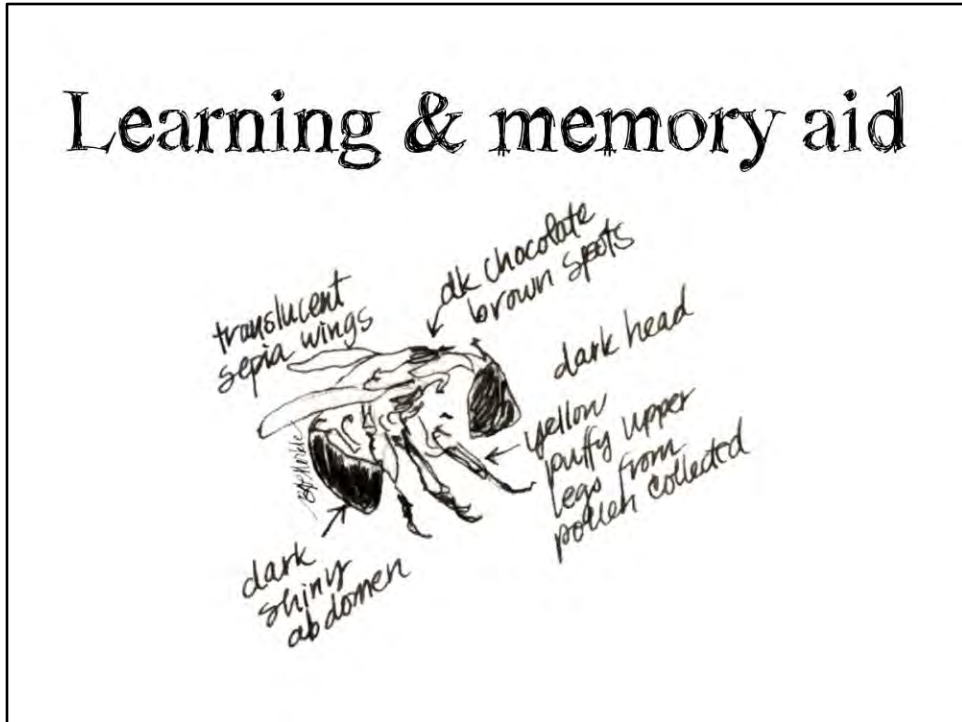


The drawings and paintings of Leonardo da Vinci, Maria Sybilla Merian, John James Audubon, or the maps drawn by Samuel Champlain and Lewis & Clark drove scientific discoveries around the world. Fast forward to the modern era – our understanding of the world back then would be impoverished had those scientists and citizens not made drawings.



There are LOTS of reasons why drawing or sketching is a valuable addition to your science tool kit.

Learning & memory aid



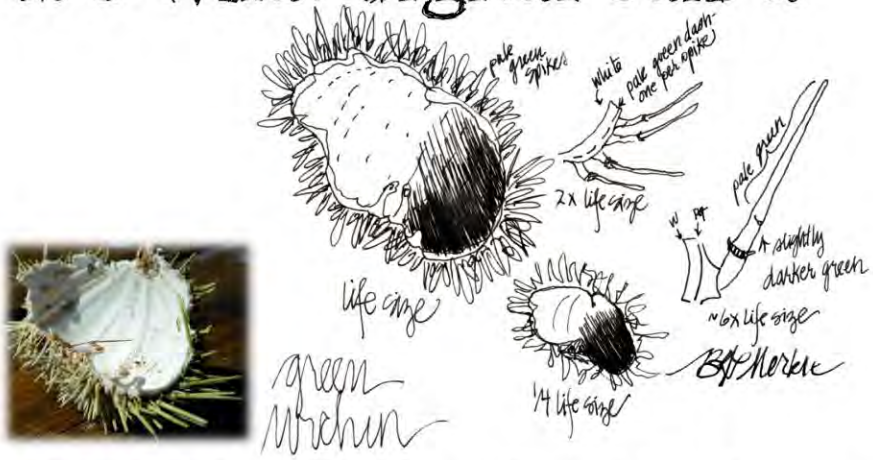
Researchers have demonstrated that drawing (even without training) can help clarify what you know, assist instructors in assessing student knowledge, and enhance public communication efforts.

Data collection



A sketchbook and pencil cannot run out of batteries, short circuit, or lose functionality because you forgot the proper cable.

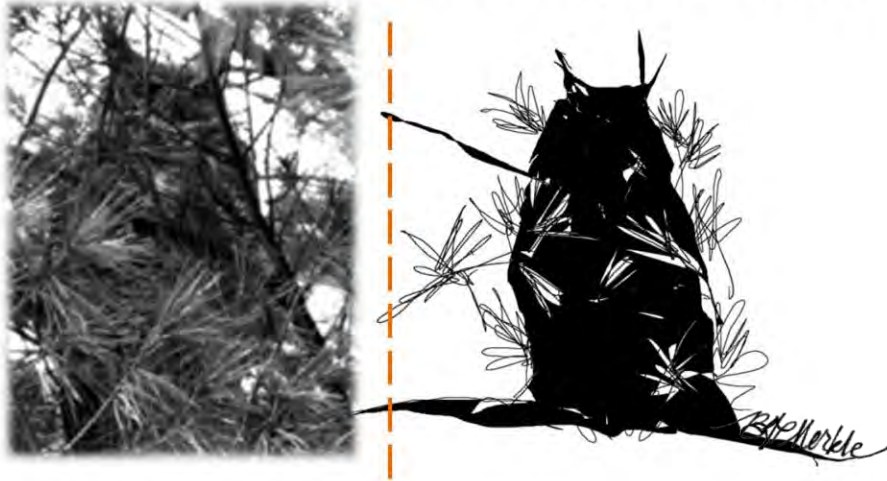
Do what digital can't.



1. Highlight key features and combine elements

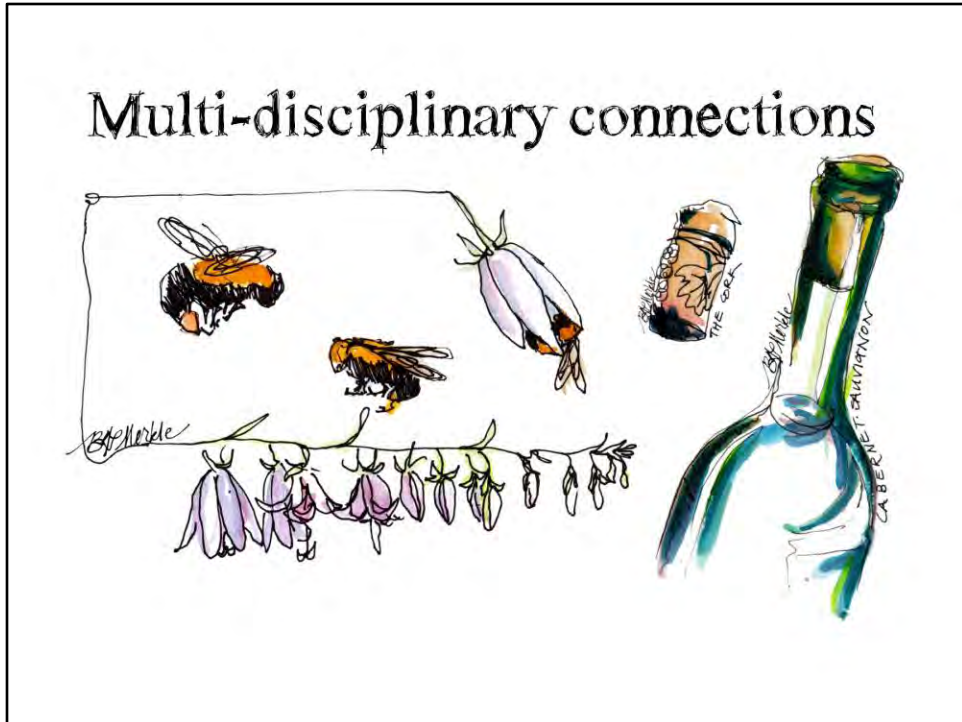
A sketch does something a photograph cannot – you can highlight key features and combine elements.

2. Capture rare & fleeting moments



Similarly, you can depict fleeting or rare events that would otherwise require specialized and expensive photography equipment.

Multi-disciplinary connections



Sketching offers you a multidisciplinary way to connect with your environment, new places, and nuances of everyday life that you might not notice otherwise.

And, there is evidence that collaboration between scientists and artists may result in better science.

But, I'm not
an artist.
I can't draw.

Yes, you can.



The curiosity, close observation, recording, and critical thinking required for drawing should seem quite familiar to you as a scientist.

Beyond that, it could be argued that humans are actually born knowing how to draw. Our ability to draw goes back even further. Archaeological records indicate that drawing was the first visual representation method.

Building your toolkit

- **Curiosity**
- **Foundation techniques**
- **Practice**



That being said, modern drawing basics are learned, not inherited.

Fundamental skills, techniques, and knowledge of different media (ex: watercolors, pencils, pen and ink) can be taught, practiced, and improved upon. Thanks to this combination of your childhood aptitude and basic drawing techniques, anyone can learn to make a sketch.

Tool 1: Drawing blind

- Learning aid
- Memory aid
- Close observation

A blank page is a blank page.



One of the greatest challenges facing us when drawing “from life” is the temptation to draw expectations and preconceptions. For example, think of the typical child’s drawing of a tree, versus the many kinds of trees visible in the world around us.

Contour drawings help us overcome the habits or symbols we often revert to when drawing by compelling us to concentrate on what we really see in front of us.

Contour drawing is a method which encourages you to truly **see** what you are observing. Contour drawing encourages us to concentrate on details and the outline of something at the same time. The subject is drawn in one continuous, connected line, just as contours of a landform are represented on a map. The result is often a little “messy,” but also tends to capture the energy or personality of a scene with lots of expression.

Contour also drawing “levels the playing field.” We focus on observations – on the process – rather than producing picture-perfect illustrations.

There's (almost) no
such thing as cheating
when drawing.

There's no such thing as "cheating" when drawing, unless you try to pass off someone else's drawing or ideas as your own.

With that in mind, the following techniques enable you to make practical use of your subject by using it as a stencil or stamp. Doing so can help you rapidly identify dominant shapes, shadows, and relative proportions.

Tool 2: Tracing

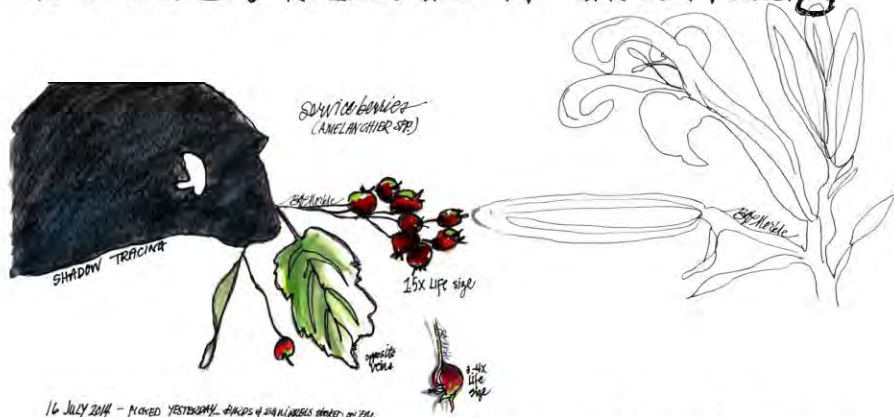


- **Size** • **Relationships** • **Form/edges**

Use tracing to capture the outline of your subject.

You can then add in the details (shading, texture, color, etc.) without having to worry about whether the overall shape is correct.

Tool 3: Shadow drawing



- Size • Relationships • Form/edges

Use shadow drawings to trace large subjects or subjects you can't lay right on your paper.

Effectively, shadow drawing enables you to trace the outline, negative spaces, etc. of a subject like a tree's branches and leaves, or a complex flower.

Tool 4: Rubbing

(aka *frottage*)



- **Textures**

Use rubbings to capture textures that are difficult to render by hand.

For example, you could accurately record different types of tree bark, the vein patterns in different tree species' leaves, or the texture of a fossil or different types of rocks.

Try it!

Resources to incorporate sketching into your research, teaching & science communication.

1. [WK 15: Advancing EcoComm workshop's resource guide \(see section on sketching\)](#)
2. My [Guide to Sketching & Field Journal Basics](#) which includes detailed descriptions of the activities I facilitated in WK 15.



1. <http://advancingecocomm.wordpress.com/2014/08/09/multimedia-scicomm-resource-guide/>
2. <http://commnatural.com/2013/08/05/incorporating-drawing-into-natural-history-science/>