

# SEA

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HOMESCHOOLERS

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**In Celebration  
of Our Children**

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**Three Ways to  
Energize your Home-  
schooling with Art**

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**Humble Food**

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**Strewing: Keeping  
the Chaos at Bay**

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**Re-Energizing the  
Study of History  
with Video Games**

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**How Assessments  
Can Re-Energize  
your Homeschool**

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**Preserving it  
Activity**

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**Teaching Math: it's a  
Science and it's an Art**

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**Tapping into Online  
Museum Resources**

---

**Super Volcanoes**

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**Pursuing your Dreams  
while Homeschooling**

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**Winter 2021**









# Table of Contents

2

**Letter from the Editors**

4

**In Celebration of Our Children**

Written by Blair Lee

6

**Three Ways to Energize your Homeschool with Art**

Written by Beth Herrild

8

**Humble Food**

Written by Dr. Sabrina Weiss

16

**Strewing: Keeping the Chaos at Bay**

Written by Michelle Parrinello-Cason

20

**Re-Energizing the Study of History with Video Games**

Written By Samantha Matalone Cook, MAT

26

**How Assessments Can Re-Energize Your Homeschool**

Written by Ellen Crain

30

**Preserving It Activity**

Written by Elizabeth Hauris

34

**Teaching Math: It's a Science and It's an Art**

Written by Kathleen Cotter Lawler & Dr. Joan A. Cotter

38

**Tapping into Online Museum Resources**

Written by Deirdre Palmer, MAT

40

**Super Volcanoes**

Written by John Suchocki

44

**Pursuing Your Dreams While Homeschooling**

Written by Brian Fitzpatrick

48

**Contributor Bios**





## Letter from the Editors

Happy New Year from SEA Magazine! Last year was hard for many, enlightening for most, and transformative for some. You may be reading this as a veteran homeschooler who had to make adjustments due to the pandemic, or you may be reading this as a new homeschooler who pulled your kids out of virtual learning because it just wasn't working. Something we all have in common, however, is that there comes a moment during the academic year when our home education hits a slump. Maybe it's a curriculum that just isn't working quite as you had hoped, or maybe your learner has hit a new developmental stage you need to adjust for. Maybe your child dislikes a subject all of a sudden, or maybe something in your family dynamic has changed. Whatever it is, your homeschooling needs some re-energizing!

Because this slump can often happen around this time of year, we've dedicated this issue to the theme of "Re-energizing your Homeschool," with articles, ideas, and activities focused on how to make small changes (or perhaps even big changes!) to bring new life and joy

to your learning environment. In our experience, it often takes just a little tweak to have a big impact. You might try exploring a subject through a new medium, adding an online class, or experimenting with new skills. Just remember that learning best happens when both you and your student are engaged and supported. We can't stress enough that re-energizing your home education can and should be as much about your journey as their teacher, guide, and mentor as it is about your learner. If you need some advice or new ideas or even just to feel like you are not alone, please don't hesitate to reach out to our amazing online community. In addition, SEA will be hosting another incredible weekend conference January 22 through 24, 2021 where experienced speakers will be hosting workshops on "Re-Energizing your Homeschool," offering a live opportunity to learn and ask questions.

Wishing you a 2021 full of magic, laughter, adventure, and learning,

*Samantha Matalone Cook & Blair Lee*







## In Celebration of Our Children By Blair Lee

I gave birth to my son the day before finals. He was two weeks early, which neither my doctor nor I expected. The only person who thought he would be early was one of my students, a mother of three. Two days before I gave birth, she came up to me and told me she didn't think I would make it through the weekend. She had been watching the location of my pregnant belly shift throughout the week, and she could just tell.

I am glad my student was correct because it means I get to spend two extra weeks of my life with my son. That child has brought me so much joy. He

has been one of the lights of my life. My story has some unique elements, but I have heard other parents tell similar stories of celebration and joy around these fantastical beings we are lucky enough to share our lives with. Of course, the joy has had some patchy spots. After all, my son is human, as am I. Like all humans, we both have our moments.

Right now, it feels like the world at large is having its own moment. Every day it seems as if there is something else to worry about. For the most part, these are big issues that we have no control over. This

makes parenting really tough. Doesn't it? The inability to control the situation to make it safe, secure, and healthy for our children can feel scary. **One of the things about parenting is that you like to feel that you have control of all the variables, all the time. With that control, you can help assure that your children will be safe and happy, get to live their dreams, and have the life they want.**

**In reality, that control is illusory, and it always has been. It is just more obvious at this time. As Alice Morse Earle said in the**

**1890's, "Yesterday is history. Tomorrow is a mystery. Today is a gift. That's why it is called the present."** This

inability to control the present is even supported by the science principle of entropy, which states that all things tend toward disorder. Case in point, virus-driven entropy, also called evolutionary entropy, is a well-known phenomenon that is an important driver of evolution and predicts that pandemics will occur.

Let's be honest though, sometimes it is easier said than done to live your life as if your days are not limitless, but that is exactly how I am starting this year. I have a New Year's Resolution for 2021 that does not require me to lose an ounce or to run a marathon, or even around the block. I am not going to attempt to give up sweets, either. I think I can keep this one for the entire year, too!

In 2021, I am going to live in celebration of my child, my stepchildren, and my grandchildren. That doesn't mean I won't worry about some of the things I can't control. I am sure to do that as well. But one of the things that has happened as a result of this crisis is that I am seeing a lot more of my family, and we are all closer because

of it. It has brought me back to the joy of meeting my son for the very first time. I have spent time doing science experiments and training our new puppy with my grandchildren. I have invented a recipe named after each of them, something pre-Covid I had only done for the two oldest. I have gotten to see all sorts of firsts for my new grandson and really gotten to know my new daughter-in-law and her daughter. I have spent significant time with my son and my adult stepchildren, and I like and admire the adults they have grown to be.

2020 proved that the world tends toward entropy. It creat-

ed anxiety for everyone as we came to realize how little control we have over parts of our lives. Who knows, 2021 might be a crazy year, too. It is possible that the most effective thing we can do to control the situation is to work to stop worrying about things we have no control over. It's time to focus instead on the relationships with the people who bring us so much joy, to celebrate these beautiful beings we share such a short geological time with!

**Much Love to All of You!  
Happy New Year!**

*Find more information about the author of this article [here](#)*





# Three Ways to Energize your Homeschooling with Art

By Beth Herrild

**Visual art, while a lovely discipline all on its own, is also perfect to energize your homeschooling.**

**Here are three primary ways to weave art into your curricula:**

## 1. Build in short art breaks throughout your day/week.

Art breaks are basically time set aside for kids to have free choice creative play with art materials. These breaks don't have to be super long, but do need to allow enough time for kids to engage with the materials and create something. A good timespan is anywhere from 15 minutes to 45 -50 minutes at a time. As the

parent, you don't need any art experience. (Whew!)

### HERE IS HOW YOU DO IT:

Each week or month, set out different types of materials to create an art invitation. You may show a technique or two, depending on the medium you are offering, but basically, you are inviting the kids to engage with the materials in whatever ways they want--as long as they're not being destructive. The biggest challenge for us adults is to back away and not offer advice on how we would do it.

One week you might set out watercolor paints, paper, and brushes. Another week, it might be a variety of collage

materials or found objects to create sculptures. You might also show kids how to create Zen drawings with repetitive patterns. Show them a few patterns to start, and then encourage them to make up their own.

Katherine Ziff, an Assistant Professor in the Department of Counseling at Wake Forest University created an art break program with 150 k-6 school children. She said, "We also considered the potentials of art materials, based on the expressive therapies continuum, a theory from **art therapy** that describes the functions of media according to their degree of fluidity or resistiveness. For example, fluid media like watercolors and finger paint help chil-



*dren relax and express feelings; while highly resistive media like collage and construction develop problem-solving skills.”*

It’s good to offer a variety of different media over time: paint, collage, construction, clay, etc. For more information about creating art invitations, check out my [blog post](#) on it.

## **2. Integrate art with your lessons by asking kids to create visual illustrations of what they write, read, or are studying.**

These can be in the form of drawings, paintings, posters, advertisements, dioramas, models, or sculptures. If your children are writing or reading a story, ask them to illustrate that. Art gives students a way to communicate things they don’t have the words for. It will engage other parts of their brains and help them understand the material at a deeper level. And it’s fun!

If you’re studying plants, insects, or animals in science, have them keep a field drawing journal where they draw the plants or animals being studied. If you’re studying a particular time period, have them create a scene that illustrates the clothing that was worn or other cultural aspects of that time period.

## **3. Integrate art with your curriculum on a deeper level.**

This is similar to the last idea but takes a little more planning on your part. If you’re studying a particular time period, look at the art from that time with your kids. Talk about what influenced the art at that time; and even what art supplies the artists had access or didn’t have access to.

For instance, talk about how silhouettes were a popular art form from about 1790-1840 (before and during the first part of the Victorian Era) because the camera had not yet been invented. Silhouettes were a form of portraiture that was accessible for common people who weren’t wealthy. Then, tape a piece of paper on a wall, seat your child in front of it, and aim a bright light at her to create a silhouette with her.

If you’re studying geometry in your math curriculum, you could introduce the concept of symmetry, and create drawings that have bilateral and radial symmetry. You could print out drawings of butterflies or people’s faces and paste only half on a larger piece of paper. Then encourage your children to draw the other half or to use compasses and create mandalas.

Another math tie-in is to draw representations of fractions; or research the golden ratio and Fibonacci sequence in nature and art. Look for patterns in nature like spirals, waves, trees, and tessellations; and then use them in creating artwork. You can look up the art of MC Escher or Gustav Klimt and create artwork that emulates those artists.

If you’re studying light, use a prism and observe all of the colors. Then ask your children to draw them. If you’re studying current events or history, ask your children to create visual advertisements for products that would make life easier, or a campaign posters for political figures.

**Not only will art help kids learn by engaging different parts of their brains, giving kids a creative outlet is healthy and fun for them. It will lead to social, emotional, and cognitive growth over time.**

There is a plethora of well-documented research on children performing better in all subjects when they participate in visual arts. Art also helps build empathy, self-esteem, and creative problem-solving skills that our children will need to succeed in this world.

***Find more information about the author of this article [here](#)***





# Humble Food

By Dr. Sabrina Weiss

**Welcome to 2021! As we exit the holiday season and look to a new year, it is common to commit to New Year's resolutions about food: "I will eat healthier," "I will eat more vegetables," "I will eat less junk food," and so on.**

This year, we have the added challenge of rethinking how we eat because of COVID-19 and social distancing; we have seen many restaurants and eateries restrict or limit offerings, and panic buying can lead to shortages of food staples and other supplies. Our routines of life, especially those that extend beyond the home and our immediate household, have been greatly disrupted - spa-

tially, materially, temporally, and emotionally. Many of us are trying to significantly reduce our contact with the outside world as a wise precaution, and that can mean relying more heavily on staple foods that are shelf stable - dried pasta, legumes, rice - or foods that are cheap and easily bought in bulk - root veggies like onions, potatoes, and carrots. Since for people in the Northern Hemisphere it is the middle of winter, fresh greens and other produce may be limited or of lower quality (unless, like me, you live in Arizona, where we can maintain winter gardens of lettuce, spinach, and other greens).

Many of us are cooking more than before - dinners at home,

and often lunches and breakfasts as well since many are working and doing schooling from home. It takes a lot of time and most of all, increases mental load (especially for women, who tend to be the default caregivers and home managers in a family). "What are we having for dinner?" becomes an overarching question that plagues many. And with so much stress on us, it's often easier and more comforting to turn to convenience food that may be more expensive and less healthy than we want.

**My goal in this article is to share some values and ideas that guide me in cooking and coaching others in cooking better for them-**



**elves and their families. First, I will share a bit about my background, then I will share some core ideas that I keep in mind as I research and acquaint myself with food, and give an example of a central ingredient from Korean culture. Lastly, I will share some links to recipes that I value from creators who come from a variety of amazing world traditions and cultures.**



## **Mixed culture, mixed foods**

Food is one of my passions. I grew up in a mixed-ethnicity household that leaned East Asian (Korean and Japanese) and that largely assimilated into white American culture. Because of this, while I grew up with a mix of foods from Korean, Japanese, and Chinese cuisines, I also became familiar with American staples like split pea soup and spaghetti. This

upbringing instilled in me a curiosity to explore and learn about foods from around the world, approaching each with respect and joy; food is a window into a culture's history, society, and values (a theme of a class I teach).

It is sadly common for there to be a lack of continuity among different generations because of cultural shifts and social trauma (many East and Southeast Asian immigrants came to the U.S. during or after wars). Many immigrants don't have many generations of recipes or family traditions because they were separated from grandparents or family homes as they fled for their lives, or they are transformed, even fractured as they live across worlds, trying to assimilate into the largely Anglo white culture of the United States and other new homes. Because of busy work schedules, many families may not make traditional foods at home from scratch, but instead buy some foods at community stores (Korean groceries have a lavish selection of soups, vegetable sides, and ready-to-eat foods). This was largely my experience growing up, and while it doesn't fit what many see as a "normal" experience, it is my lived experience, and because of it, I passionately

seek to learn about and engage with food traditions everywhere I can find them, and to appreciate and give thanks to what I am allowed to share.



## **Four Values for "Humble Food"**

**As a teacher and coach, I look for ways to empower others using innovative frames to help us overcome anxieties about cooking food, especially trying new foods or simply overcoming a feeling that "I can't cook."**

Some of us are overwhelmed by ethical, practical, and logistical concerns; every food is "unhealthy" in some way, and every food is fraught with complex moralities.

While I cannot give you all of the answers, I can share some starting points that can help. I approach my "culinary coaching" as a service and engagement with people - past,





present, and future - to bring together ideas and share in a spirit of generosity as a facilitator, not an expert. I see myself as a guide or networker to help those around me find information and foods that appeal and fit with their desires and needs.

**With this in mind, here is my framework for what kinds of cooking techniques and recipes I seek out and prioritize when sharing with others:**

### **Humble:**

I focus on foods and cooking that are not the most glamorous or “superfoody”, but that are nourishing and accessible. These ingredients may have been labeled as “peasant food” in history because they were not considered aesthetic or fancy enough for rich people, but they are good foods. Root vegetables, off-cuts of meat (chewy, boney), and legumes are some examples of “humble” ingredients. Many of these foods are

part of a food ecosystem (described by Dan Barber in *The Third Plate*) and are produced along with a “star” ingredient or are a byproduct of one; historically, they were eaten along with other foods to parallel how they were produced together.

### **Respectful:**

I strive to avoid culinary and cultural appropriation by respecting the people who have developed these recipes and ingredients. Where possible, I acknowledge sources and appreciate food as it is made by the people who created it. Sometimes, a substitution is necessary as a transformation (ex. bacon for pancetta in Spaghetti alla Carbonara), but it is not about “elevating” a dish; it is about making it accessible, realistic, and sustainable in my cooking context. One way I signal this is by saying “Chinese-style” or Carbonara-style” when I deviate strongly from the original ingredients, techniques

or context. Substitutions are done mindfully, deliberately, and transparently. I also magnify the voices of people of the cultures and experiences of the cuisines I share where possible, such as by giving information about the original food or recipe.

### **Practical:**

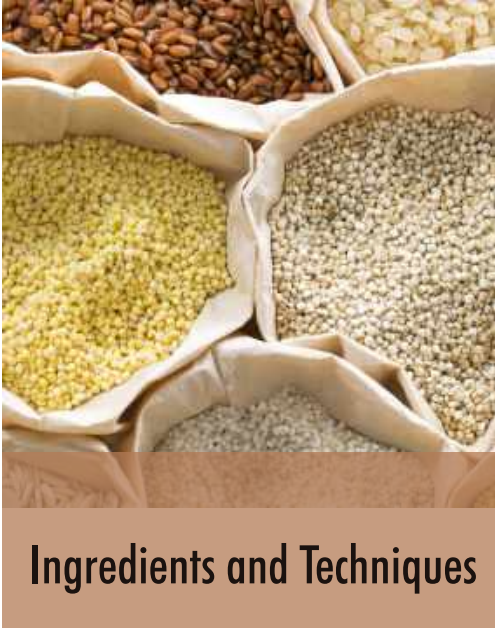
I aim to promote skills and techniques that are useful for people to increase access to good food and to cooking practices. I never claim that a recipe is “quick” or “easy,” because nothing is quick or easy at first. But it is valuable to know when a dish is more or less forgiving, technique-wise and ingredient-wise. By focusing on staple foods at the core of these recipes, they also are practical for us in terms of shopping and planning. It is much more manageable to plan 3 weeks of meals when you know that onions, carrots, potatoes, lentils, and rice will be the base ingredients, leaving only a few fresh or special ingredients like spices, herbs, and fresh proteins (like meat or tofu) to buy.

### **Realistic:**

I recognize that people are people - we have different tastes, preferences, interest in novelty. Especially in times of stress, change is hard, and we



should be kind and gracious to ourselves and each other. One cannot change a diet overnight. Families have to negotiate food among each other and gradually. Many people cannot completely cut a food ingredient out of their diet at the drop of a spoon.



Here is a list of common staples in white, Western households that are generally affordable and easily stored. Bolded ingredients are central to many recipes across cuisines (listed at end of article):

#### Refrigerated (long storage):

- **carrots**
- **cabbage**
- broccoli
- cauliflower
- other brassicas like kale, collards
- green beans
- summer squash/zucchini

#### Pantry (cool storage):

- **onions**
- **potatoes**
- **sweet potatoes**
- winter squash/pumpkin (refrigerate if cut open)

#### Dry goods:

- **Legumes** - e.g. lentils, beans, chickpeas, peanuts
- **Rice**
- **Whole grain berries** - e.g. wheat, barley, rye, oats
- Pseudograins - e.g. buckwheat/kasha
- Nuts

Many of these ingredients are dry or very hard, and so benefit from longer cooking times like stewing, braising, and simmering. In traditional contexts, it is common for a small or boney cut of meat to be used to add flavor (because more was not available or fancy cuts like steaks were not affordable), but these ingredients can just as easily be made without while still being nutritionally complete. These staples *can* be somewhat bland, which is why looking to diverse cuisines can help us learn about sources of flavor, especially ingredients that are high in *umami*, which is usually associated with glutamic acid and makes food “delicious” or “savory”. Adding *umami* from plant sources is especially important if one is excluding meat and dairy from the diet, as

animal products like meat and cheese often are sources of this taste.

In the list below, bolded ingredients are rich sources of *umami*. All of these bring distinctive flavors, and are often core to making a particular food or dish “taste like” a certain cuisine. For example, garlic, green onions, sesame, and red chilies evoke a Korean flavor palette because those ingredients are often present in Korean cooking. Meanwhile, fenugreek seeds, ginger, and turmeric evoke an Indian flavor for similar reasons. Most of these are inexpensive and/or stable for storage for months, even years, making them practical ingredients to keep on hand. By investing in some of these spices and flavor sources, you can make dishes with the same staple ingredients that taste completely different!

#### Ingredients that help to “pivot” foods towards a cuisine’s flavors:

- sesame oil
- **doenjang/miso** (fermented soybean paste, Korean/Japanese)
- **kimchi**
- **gochujang**
- ginger
- garlic
- cumin
- cardamom



- methi/fenugreek seeds
- tahini
- dried chilies (esp. gochugaru, Aleppo, Guajillo, etc)
- **sundried tomatoes**
- **tomato paste/sauce**
- **mushrooms** (esp shiitake, porcini)
- **dried fish**
- **seaweed**
- Balsamic vinegar
- Chinese Black vinegar



To illustrate how these come together, I will share as an example an ingredient from Korean culture that is delicious, hearty, and very humble.



### **Doenjang** **(Korean bean paste)**

Doenjang (Korean: 된장찌개)<sup>1</sup> is Korean fermented soybean paste, believed to date back to at least 300 CE, in the Silla dynasty. Similar to Japanese *miso* (but more robust in flavor and

texture) and likely derived from Chinese fermented bean pastes, *doenjang* has been a food staple in Korea for centuries and continues to be one today, usually in the form of a stew (*jjigae*), but also as a sauce and flavoring in many dishes. In fact, Psy’s famous song “Gangnam Style,” which lampooned conspicuous consumerism in Korean society, obliquely refers to a common trope called the “doenjang girl” (된장녀 - *doenjang-nyeo*). This is a young woman who puts on a facade of being wealthy by spending ridiculous amounts of money on something trendy, like a cup of Starbucks coffee or a designer handbag, but secretly only orders *doenjang jjigae* when eating out - the cheapest dish on the menu<sup>2</sup>. Even in Korea, *doenjang*

*jjigae* is humble - it is cheap, accessible, and nutritious enough for someone to live on between their overpriced micro-cups of designer coffee that they knock back on exciting dates.

Maangchi, an outstanding Korean-American content creator, offers a [\*delicious recipe for doenjang jjigae\*](#) that includes shrimp and dried anchovies (a Korean staple for soup). However, as I often did not have the ingredients or the time to make something fancy, I have found myself perfectly happy making it with just potato, onion, zucchini, a sprinkle of *gochugaru* (Korean red chili flakes) and tofu (firm or soft, not silken). Served with rice (I use an East Asian style medium brown rice, cooked in that style), it is a simple but satisfying meal,

<sup>1</sup>Also Romanized as “dweng-jang”, “dwengjang”, “toenjang”, etc

<sup>2</sup>There is plenty to unpack about the self-empowerment that some see in managing one’s spending, as well as many questions about gender in cross-cultural context. For more, I recommend you read the article from which I drew inspiration: <https://seoulbeats.com/2012/12/korean-through-k-pop-101-the-bean-paste-girl/>



thanks to the great flavor that the *doenjang* brings. **Notice how four of the six ingredients are staples, and another is a dry spice? This could be a great way to use up those leftover bits of onion and zucchini you have, possibly a piece of potato (or daikon, or carrot, or rutabaga...), even a couple shreds of cabbage or a few spinach leaves in a quick stew.** What makes it distinctive is the *doenjang*, which is sold in all Korean stores and most Asian stores in a shelf-stable tub. Once you open the container, it can live in your fridge for many months; as a fermented food, it may change in flavor, but is very resistant to spoilage. This fermentation also makes it a great probiotic food that aids digestion, especially of heavy and fatty foods.

In addition to its use in stew, *doenjang* is excellent paired with vegetables like cabbage (and cousins like kale, collards, cauliflower) and radishes (especially daikon). Because it brings lots of *umami* (as all East Asian fermented bean pastes do), it can be a boon to vegetarians and vegans who want a rich, savory flavor, and to omnivores who want to add a little extra “oomph”. One of my favorite applications for *doenjang* (or *miso*)

is substituted in place of mayonnaise in coleslaw. By blending about a spoonful of *doenjang* (a little goes a long way) with oil, vinegar/fruit juice, and sweetener, then tossing with shredded cabbage (and carrots), I make a vegan-friendly, lower fat, and lighter coleslaw that pairs well with most foods. Once again, the humble cabbage and carrot take the spotlight with a few extra flavors added in, this time as an internationally inspired addition to a familiar meal.



## Recipes and Resources

To conclude, I wanted to share some excellent recipes from content creators from a variety of backgrounds and cultures that fit with an ethos of humble cooking, as well as some outstanding cookbooks from writers in these cultures. They all tend to center around similar staple ingredients and are forgiving in preparation. As a bonus, since most are cooked in batches, often slow-

cooked in a large pot, they can be easily frozen for eating later. I like to freeze half of a big batch (in portions), then rotate through the different frozen foods for variety.

Note that most of these recipes start with sweating onions in oil, adding spices, then browning meat (if used), adding spices/seasonings, then adding vegetables and/or legumes/nuts. Although they have very different flavors, textures, smells, and origins, they tend to follow a similar pattern. And other than specific spices, these recipes all primarily use humble ingredients and produce a meal that can stand on its own (sometimes with some bread, rice, couscous, or other starch).

### Online recipes:

- [Quick and Easy Pressure Cooker Chicken, Lentil, and Bacon Stew With Carrots Recipe](#) | Serious Eats
- [Split Pea and Ham Soup Recipe](#) | Serious Eats
- [Chicken Peanut Butter Soup](#) | Gambian Style Dada's Food-Crave Kitchen
- [How to Make a Tagine with Chef Mourad Lahlou](#) | Williams-Sonoma
- [Scotch Broth Recipe](#) | Serious Eats
- [KHORESH FESENJAN](#) شروخ نوجنسف | FESENJOON



- [Easy Slow Cooker Nihari \(Pakistani Beef Stew\)](#)
- [Channa Cabbage](#) | By Vahchef @ Vahrehvah.com (Vegan)

Here are some cookbooks (written by people of color within their culture) that have inspired me to explore cuisines and to improve my knowledge and techniques. I highly encourage them, both as a great way to learn about new cuisines and because many of them emphasize humble ingredients and practicality.

### **Cookbooks:**

- [660 Curries](#) | Raghaven Iyer
- [Come into My Kitchen](#) | Ranveer Brar
- [Decolonize Your Diet: Plant-based Mexican-American Recipes for Health and Healing](#) | Luz Calvo and Catriona Rueda Esquivel
- [Indian-ish: Recipes and Antics from a Modern American Family](#) | Priya Krishna
- [Maangchi's Real Korean Cooking: Authentic Dishes for the Home Cook](#) | Maangchi
- [Masala Farm: Stories and Recipes from an Uncommon Life in the Country](#) | Suvir Saran and Raquel Pelzel
- [Teff Love: Adventures in Vegan Ethiopian Cooking](#) | Kittee Berns



If you would like to contact me to continue this conversation, or to seek out coaching to help you plan and prepare meals with less stress, please feel free to email me at [sabrinamweiss@gmail.com](mailto:sabrinamweiss@gmail.com).

I am also offering a course in 2021 for students called "[Food: Culture, Health, Justice](#)," which explores the cultural, historical, health, and social justice issues related to food in a cross-cultural and intersectional context. While it is not a cooking class, it can be an opportunity for students to learn and explore foods and incorporate cooking into projects.

***Find more information about the author of this article [here](#)***



# SEA Homeschoolers Online Conference Series

Re-Energize Your Journey  
Through Learning

January 22-24, 2021

Planning & Resources for Your  
Homeschool Journey

April 23-25, 2021



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## Strewing: Keeping the Chaos at Bay

By Michelle Parrinello-Cason

The other day, I found myself searching the web using terms like “psychology of window displays” and “visual marketing tips in storefronts.”

Now, you may not know this about me, but I don’t own a storefront, and I have no intention of doing so. Why, then, was I looking for this information? To better homeschool my kids — I hope

### What Does it Mean to “Strew” Something?

I’ve long been a fan of “strewing,” but I’ve come to terms with the fact that I was taking the “strew” a little too literally.

The dictionary definition of “strew” is “scatter or spread things untidily over a surface or area.”

That, of course, is not what a homeschooler means when they say they like to strew things. Most homeschoolers use strewing to mean creating “invitations” for active learning without

explicitly giving instruction. In other words, strewing is about leaving great learning materials around in a way that invites engagement.

For me, though, the two definitions had somehow gotten mingled and most of my “strewing” for education looked a lot like the “strewing” that happens when the cover slips on a grain truck and leaves the highway littered with debris. (I’m from the Midwest. Sorry if that metaphor doesn’t land for everyone.)

I’ve spent a lot of time thinking about what goals I want my chil-

dren to reach and how best to get there. I pore over reading lists and science kit recommendations and Common Core curriculum standards. I plan. I choose wisely. I really care about this.

So imagine my delight when I found out I could put all those research skills to work on the back end and then just leave it all in piles around my house and wait for the magic to happen.

A big bin of educational toys here. A towering stack of great books on a variety of topics there. A huge collection of board games. Done, done, and done. What could be easier?

Except it didn't work. The magic wasn't happening. I believed in the logic and philosophy behind strewing, but most of my well-planned "invitations" were going nowhere — and I now think that's because they weren't, well, very inviting.

things fresh and interesting.

There are fewer readily available examples for the older set, however. As standard learning models move toward more testing and worksheets and learner interests are more often explored independently, visual checks of classrooms offer fewer insights into how to engage learners voluntarily.

That's what left me frantically googling consumer psychology in the hopes for some answers.

### Here's what I found.

#### Effective Strewing Tip 1: Less is More

*As Princeton researchers put it,* "Multiple stimuli present in the visual field at the same time compete for neural representation by mutually suppressing their evoked activity throughout visual cortex, providing a neural

correlate for the limited processing capacity of the visual system."

**To put it another way, when you're looking at a bunch of stuff at once, it's more difficult to focus.**

I want my home to be full of lots of options for different kinds of play and multiple subjects, but how those choices are displayed — and, crucially, how many are presented at once — matters.

That doesn't mean you have to give up the boxes of fantastic curricula or the shelves of amazing games. It just means that storage and invitation should probably be two separate categories.

Have you ever been in the Apple store? A minimal design layout invites customers to come in and play in the sparsely

## The Anatomy of an Education "Invitation"

It seems like we have lots of examples of invitations for our earliest learners. Just look at children's museums where hands-on activities are available at every turn. These same principles can be seen in many preschool classrooms where bins or "stations" are set up and activities rotate through to keep





stocked main area, but there's tons of stock — including items that aren't on the floor at the moment — behind the scenes.

### Effective Strewing Tip 2: Place it Thoughtfully

Stores use *lots of psychological hacks* to train customers to go for the items they want. Eye level is known as “buy level,” and you'll see the more expensive name-brand products on this level while the cheaper alternatives are often tucked below or above it.

The same tip applies to our kids and the things we lay out for them to find. Keep in mind both their visual plane as well as accessibility and area of use. So many people create gorgeous “classrooms” in their homes only to get frustrated because their kids never seem to actually use them.

Identify the areas of your house where gathering and play naturally happen. Tap into the existing rhythms of the day rather than trying to fight against the tide.

### Effective Strewing Tip 3: Follow Simple Aesthetic Principles

Let's face it, most of these carefully planned invitations are going to end up tousled and disheveled by the end of the day — at least that's the hope! There's no reason to spend hours upon



hours making every single thing you do Pinterest-worthy.

A few simple aesthetic principles can help make your invitations look more appealing, however, and that's not just a matter of form — it's key to their function.

I noticed this principle in action when I went into the art room at our favorite children's museum. The supplies were arranged in transparent containers and sorted by color. They roughly went from large to small. It was not only beautiful, but it was easy for the guides working the room to tidy things up in a hurry, and it definitely invited interaction.

Clothing stores will often arrange their racks by color to draw our eyes and make everything seem a little more ordered. Size grouping is another common trick for store displays that has the same effect.

## Don't Let the Perfect Be the Enemy of the Good (Enough)

I'll be the first to admit that researching and thinking through these principles didn't magically make every educational plan I have work, but things certainly go a lot smoother when I use them.

I also like that they're simple enough that I can remind myself to get back on track when things eventually devolve into chaos once again. There's not some complicated system that's either functioning or not. Instead, there's a fresh start each day (or even in the middle of the day) to try again.

*Find more information about the author of this article [here](#)*

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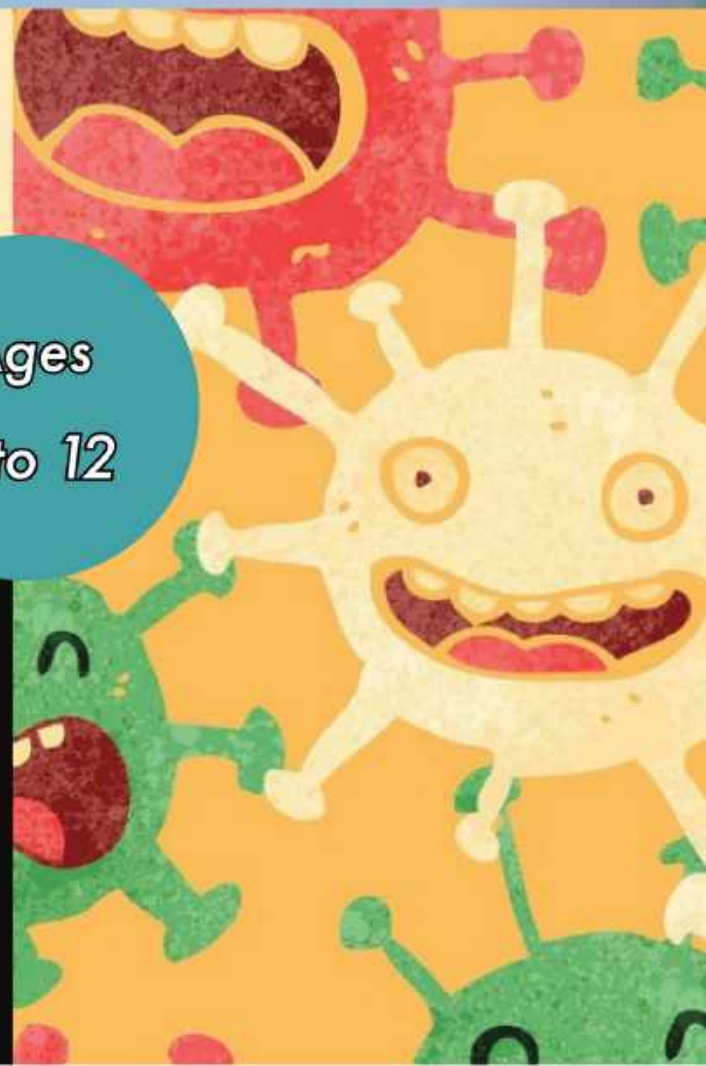
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# Re-Energizing the Study of History with Video Games

By Samantha Matalone Cook, MAT

**It's no secret that our family is a gaming family. Board games, video games, role-playing games, you name it, we play it. In many of the workshops I have given over the years, I've pointed out that using games can be a wonderful catalyst to academic subjects. I've used games to introduce, connect, or reinforce concepts. I've used games as a strewing technique to gauge interest in an idea. I've used games to branch out into new knowledge and skills. I've even made games with my students. In this article, though, I want to focus on video games. Video games are often the least understood and utilized option in education, but have extremely high engagement and many benefits. If you are looking to re-energize your study of history, you may want to consider playing some video games!**

Video games have a lot going for them, such as enhancing hand-eye coordination, strategic and creative thinking, and social cooperation. The awesome benefits of playing video games could be a full article on its own. But if we focus on history and the catalyst that video games can provide between a student and this subject, some very specific opportunities come to light.

There's a story I have told in a few workshops and keynotes about my favorite example of a video game sparking an interest in history. It involves my middle child, as he was entering adolescence. To be frank, not much seemed to be of interest to him at all, much less history. He was deep into his *cocooning*, a phase in which many teens withdraw as they cope with this developmental transition. Gaming, however, was one of

the few things that was still constant and a source of connection. So, we played games. Lots of games. One of those games was a video game called *Assassin's Creed*.

*Assassin's Creed* is an open-world action-adventure stealth video game. Open-world means that a virtual world has been created that the player can explore and pursue the game objectives freely, rather than have strict, pre-determined pathways or actions they must take. The game features a combination of historical fiction, science fiction, and real historical events and figures. There are about 24 games in the *Assassin's Creed* franchise, and while the storyline varies for each of them, there is a consistent thread throughout them all: a long-term struggle for peace between the Assassins and the Templars. Each of the games is set in a

different historical time period, and this is where my son and I first found common ground.

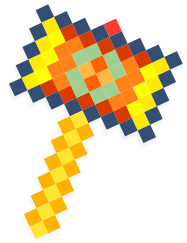
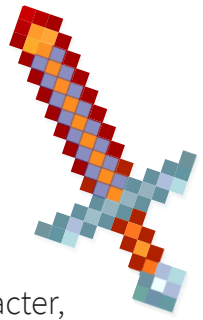
**There are two different approaches I take with games of any kind when connecting them to a subject: passive and active. With the passive approach, I am letting the student get what they need out of the game, and letting the game teach in the way it was designed. This is often the way I begin, because it not only gives me a lot of information, but also because I'm not immediately making the video game into a lesson, which will turn many kids off.**

If I was strewing the game to find out if the subject matter was an interest of my student, I might stop there if no interest is shown. If it was a subject I was going to be covering regardless,

the game often serves as my opening hook to draw them in and start a conversation. I then take an active approach to the game. This includes surveying the history presented for accuracy, studying historical figures, events, or groups individually, analyzing the plot and virtual world created in the game, and looking for other subjects that are deeply tied to the history in the game. Note that even while actively approaching the game, the game is still passively teaching. An example can be seen as follows.

The first version of *Assassin's Creed* my son and I played together was *Assassin's Creed III*, set around the American Revolution. At first, we simply played the game and had conversations about strategy, the characters, the setting, etc. This passive approach allowed us to get a sense of gameplay and

become comfortable with the setting. My son soon became interested in several elements in the game. He liked the visual style of the main character, so he learned about cosplay, learning to sew and make the props. I began pointing out what was accurate and what wasn't about the American Revolution, which turned into a longer-term study of people and events of the 18th century. I want to point out that doing this even just once gave him the tools to examine other time periods: knowing what to look for, what questions to ask, and how to research. It set a foundation that he has built on with each subsequent game he plays and historical period he studies. The spectacular visual world created in the game also got him interested in art and architecture, which he has studied both historically and as a drawing form. Finally, this (and many other games) has sparked a continuing interest in game design and development. He's taken several classes on the subject as a result. In all, this experience left us wanting more and we have since used many other games as a bridge to exploring aca-







demic subjects. Each time has similarities in the way we study the history and differences that are specific to the game. As he has gotten older and defined some long-term academic goals for himself, we have expanded our use of writing and projects about games in a more formal way. I'm in my last year of homeschooling this teen and he happens to enjoy Norse mythology and history which coincides with the release of the latest *Assassin's Creed* game: *Valhalla*, so I recently rearranged our plans so we could immerse ourselves one more time.

This is just one of many games and game franchises I've used over the years with both my own kids and students from my classes. There are many options for every level of age and ability, and every gaming platform available. While I have focused in this article on

games that already employ a historical setting, don't forget that even non-historical games can be used to tie in the history of an interest. For example, I once helped a student create a "History of Batman and Robin" project (that included a history of superhero gadget design!) based on their love of the Lego Batman video game.

Again, you can use video games in a myriad of ways to explore academic subjects, but here are some simple reminders:

- Use the game as a hook to introduce a time period, either for study or to observe interest.
- Invest in learning about the time period and make a list or chart of what is historically accurate and what is not.
- If the storyline appeals to your learner, find out if any franchise books or fan fiction has been written to accompany the game. If not, or in addition, find appropriate historical non-fiction or fiction to add to your study of history.
- If the art and visual game design attracts your learner, they can study the art history of the time period to find influences on the game, try drawing and painting in the style of the game, or use an online program to develop their own game.

- Speaking of their own game, learners may want to do a project in which they re-imagine the game they are playing or be challenged to change it so that it is historically accurate. They could also design an entirely new game according to how they would have created it.
- Cosplay, map-making, prop-building, figurine painting, and other forms of making and craft are legitimate, kinesthetic ways to connect learners to the story, and therefore the history.
- If your learner is not interested in history, find something else about the game that appeals to them first. Maybe it's strategy, or building, or the characters. Whatever it is, start there and work up to exploring the history.
- You can also begin with the games they are already interested in. Perhaps it's a certain genre of games or it's a game that all their friends are playing, but you can find a bit of history in any game and build up their interest before introducing games that are more history centered.
- Some games are about a general time period and some are about a specific event or person. Choosing the games you use based on what they cover can be strategic and useful.
- Some games have educational options to enhance your study

of history. For example, Assassin's Creed has both a Story Creator Mode, which allows you to create your own narratives in the game, and Discovery Mode, which allows you to explore the virtual world they have created without gameplay. Another example is Minecraft, which has an education program, but also has historical mods you can download and add to your regular gameplay.

- Many of the video games based on history involve conflict and war, though there are some that do not. Some video games have educational components that let you bypass battles. Regardless of which games you choose to explore, I recommend having discussions with your learner around the themes found in video games, which is another bridge to understanding history.
- If you have a VR gaming system, there are some terrific new options continuing to develop that offer an immersive experience of historical settings and storylines!
- While you don't necessarily need to play the video games yourself, you should at least spend some time watching your student play and talking about the game. It can also

bring a wonderful new dimension to your relationship with your child. Investing the time to learn about and embrace your child's passions is an

expression of love, support, and understanding. In my experience, what follows is an openness to possibilities for both parent and child.

Below are some other favorite video games to explore history. This is by no means a complete list, and neither is [this list](#) on Wikipedia, but it is meant to get you started thinking about how you can incorporate video games into your student's study of history. I've given a general age range, but every learner is different in ability and sensitivity, and every family has their own boundaries on elements such as strong language, violence, and sexual themes. If you are unsure about a game, I suggest you read reviews, such as those on [Common Sense Media](#) and have an open dialogue with your student about what games they would like to play and how you will approach more mature themes.

### **Minecraft and Minecraft Education (all ages)**

One of the most popular games in the world, *Minecraft* has a few options. There are *mods* that have historical elements to them that you can download and add to your gameplay. You can also get lesson plans from *Minecraft Education* that are specifically designed to teach history. Minecraft also has the benefit of having multiple players in the same world, making collaboration possible.

### **Spore (all ages)**

I included this game because I've used it several times to teach evolution in a prehistory unit. Kids love determining the fate of their creatures through the five stages of evolution: cell, creature, tribe, civilization, and space. *Spore* is a terrific way to connect science and history.

### **When Rivers Were Trails and Never Alone (all ages)**

*When Rivers Were Trails* is a game similar to Oregon Trail, in which a member of the Anishinaabeg is displaced from their traditional lands in Minnesota during the late 19th century and heads west to California. Never Alone (Kisima Ingitchuna) is the journey of an Iñupiat girl (Alaska Native) and an arctic fox as they encounter obstacles while trying to save the girl's village. Both games were created by and/or in collaboration with Indigenous contributors.





## Civilization (middle school and up)

*Sid Meier's Civilization* has been around a long time, and is still one of the best strategic historical games. The basic concept is that you attempt to build an empire that will last. Beyond the foundation game, there are also expansions you can purchase for extended and more complex play.

## Hearts of Iron (middle school and up)

There are several versions of this, but my son's favorite is *Hearts of Iron IV*, which allows you to take command of any country in World War II. This game is high in strategy and critical thinking and explores the idea of alternate history.

## Banner Saga (middle school and up)

*Banner Saga* is a Nordic role-playing game trilogy; the story builds based on your choices actions as you try to save your people.

## Imperator Rome (middle school and up)

*In this game*, students immerse themselves in building the Roman Empire, exploring culture, politics, geography, deities, and conquests.

## Ancestors: The Humankind Odyssey (middle school and up)

For students who want a more intense experience of guiding human evolution, *Ancestors: The Humankind Odyssey* allows players to evolve their clan to the next generation, building on adaptations and mutations for survival.

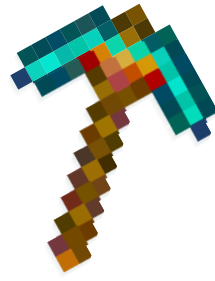
## Europa Universalis IV (high school and up)

Another empire building game that uses strategy and creativity. *Europa Universalis IV* has multiple expansions available, set in different parts of the world.

## Total War (high school and up)

The *Total War sagas* focus on a specific time period or region, while players immerse themselves in the story through strategy, diplomacy, and action.

Assassin's Creed (high school and up, possibly middle school and up)



Depending on your comfort level, this game could be played by students in middle school, but it is rated M (for Mature, 17+). The older games are less realistic than the more recent versions, and each version takes place in a different time period and part of the world. *Assassin's Creed* also has, as mentioned above, both a Story Creator Mode, which allows you to create your own narratives in the game, and Discovery Mode, which allows you to explore the virtual world they have created without gameplay. The Discovery Mode has no battle or quests, just the environment.

Video games can be an awesome way to connect learners to a myriad of subjects and re-energize your studies. While video games may not be the conventional choice in studying history, it is a fun, engaging, and multidimensional way of studying the past that will delight many learners. They may ignite, or re-ignite, an interest in history for your student!

**Find more information about the author of this article [here](#)**



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# How Assessments Can Re-Energize Your Homeschool

By Ellen Crain

**If homeschooling is feeling like a struggle, that can be a sign you aren't teaching your kids at the level they need. Because kids are kids, they will say "This is boring" if the material is too hard or if it's too easy. So how can you know what your kids need from you? Give them an assessment (yes—a standardized test!)**

Often homeschool parents think of testing as something schools do to make sure everyone is chugging along the same path, but used correctly, tests can be tools that help you reach your kids where they are and encour-

age them on whatever learning path is best for them.

So how do you do that? First, pick the right test. You want to be sure you will get the data you need in the areas where your kids are struggling. If math lessons are a battle, look for a solid math assessment. Before you order, check out the score reports and make sure they will give you the information you need to adjust what you are teaching. Ideally, you want more than overall percentile rankings—subtopic scores and explanations of what your child is ready to learn are ideal. Also check the age of the assessment. Some homeschool

assessments are from the 1990s or even older, which means that they aren't in line with current standards and may use outdated terms as well.

If your child is not neurotypical, consider that when selecting a test. Dyslexic kids may benefit from a test that offers text-to-speech. Kids who are working significantly above or below their peers may need a cross-grade test to ensure they are given questions at their performance level. Look for a test that allows accommodations like what you find works well for them on a normal learning day.

When it's time to test, encourage your kids to work on the

**Remember that every child has their own learning path, and our goal is to give them the support they need now, not to turn them into “average” learners.**

**So, move on from the comparisons, and look at the subtopic scores and learning statements.**

test in the same way they would if it were an assignment from you. Sometimes kids are encouraged to work much harder on tests than they normally would, but because our goal is to discover the level where they are comfortable working, we don't want them to push themselves to the absolute limit on the test. Encourage them to do their everyday-best, not their superhero best. Make it fun- choose test dates where you aren't too busy with other things, and plan a treat for after the test, like a special snack or outing.

After the test, ask your child what they thought. Do they feel like they did well? Do they have questions about any of the test items? Is there something they saw on the test that they want to learn more about? Talking about the test afterwards can help kids feel less anxious about testing and may even take you down some fun tangents in your learning.

When you get the results, you will probably first look to see how your child compares to

their peers, and either breathe a sigh of relief if the number is high enough, or panic if it isn't. But while those comparisons can be helpful if you are signing your child up for classes outside the home, remember that every child has their own learning path, and our goal is to give them the support they need now, not to turn them into “average” learners. So, move on from the comparisons, and look at the subtopic scores and learning statements.

Subtopic scores can highlight strengths and weaknesses in your child's performance. Weak areas can indicate either an area where your child didn't understand the topic when it was taught, or an area your curriculum hasn't covered. You may know that, for example, your math curriculum takes a mastery approach and introduces geometry later than a public school curriculum would, and in that case, you might ignore low scores in the geometry subtopic. However, if your child is getting lower scores in an area you have covered, you may want to

set aside time for some review to ensure they have a solid conceptual foundation to build on going forward. If you aren't able to help your child improve, you may want to look into getting some outside support, whether it's an assessment for learning disabilities or a talented tutor in your community.

**Now that you know where your child is, what do you do with it? One great way to empower your child is to use your test data to guide them to a short-term goal, and then help them achieve it. Help them first pick the area where they want to work, and then to choose a specific, measurable goal they can achieve in 6 weeks.**

Once they have chosen their goal, brainstorm strategies with them, and have them think about who can help them and what kind of help they may need. Then talk about how you will track their progress, and how they would like to celebrate when they achieve their goal. If your child wants to focus on an area of strength instead of weakness, let them!

In addition to your child's short-term goals, you will also want to put the data to work individualizing their lessons. For



kids who are slightly ahead or behind, you can continue to use the curriculum you have, but either slow down to give more background, or move more quickly. If you are interested in changing curriculum, consider the whole child as you shop—don't get an overly wordy math book for a kid who struggles with reading, for example. As a general rule, choose textbooks that are a bit below the top of your child's reading ability, so they are able to concentrate on the topics being presented without being distracted or confused by the way they are being presented. For highly gifted kids, remember that they may not have the maturity, attention span or executive function for curricula that is at the right level for them academically, and so they may need you to make adjustments in the length of assignments or to help them organize their work.



As you get used to using assessments as a guidepost in your homeschooling, you may find it helpful to test two or three times a year to measure growth and celebrate achievement.

***Find more information about the author of this article [here](#)***



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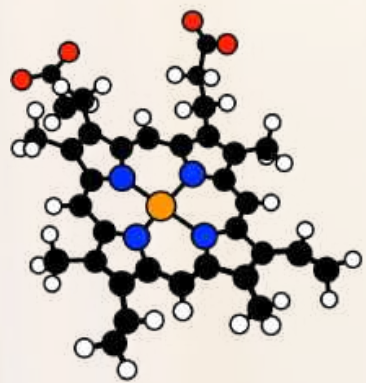
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## Preserving It Activity By Elizabeth Hauris

Imagine that you are living in the past - in a time before electricity was wired directly into your home. No movies! No computer games! No air conditioning! Life would look very different, but you could learn to live without these luxuries. However, there is one item in your home, powered by electricity, that you would need to figure out clever ways to live without fast because it provides something that is essential to life. It's big, it's a rectangular prism, and it's in your kitchen. Any idea what it is? Your refrigerator! If you look outside there isn't a lot to harvest from the earth

right now: gardens are dying; animals are scarce; and nuts, fruit, and mushrooms have all been gobbled up by hungry people and animals. If you couldn't pop open the fridge what would you eat? What did people throughout history do to take food from a time of plenty - from harvest time or butchering an animal - and save it without refrigeration so they could have plenty to eat during lean times? There were a lot of ingenious methods: picking, smoking, drying, and more. Let's look at two food preservation techniques you can try at home from two different times and places in history.

### The Richest Man in the World

First, let's talk about salt. Preserving food through a process called salt curing was important not only in climates with cold winters when no food would grow, but also in hot climates where food would spoil quickly. In Africa, about seven hundred years ago, control over half the continent's salt supply was one of the things that made Mansa Musa the richest man in all of history. Mansa Musa ruled over the African kingdom of Mali and, adjusting for inflation, his wealth would equal about 400 billion dollars today. For comparison, Bill Gates, founder of

Microsoft and one of the richest men alive today, is worth only a paltry 61 billion dollars. Historian's at the time wrote of Mansa Musa's dogs running around with gold collars on their necks and his horses sleeping on silk rugs. When he traveled to other countries on a famous pilgrimage he spent so much money and gave so many gifts that gold actually lost value in the areas he traveled through and became less expensive for more than ten years after he left!

Salt could be used to preserve many foods from fruit to meat for years at a time and it also provided vital minerals to the people who ate it. You can see why plain old salt was once worth its weight in gold!

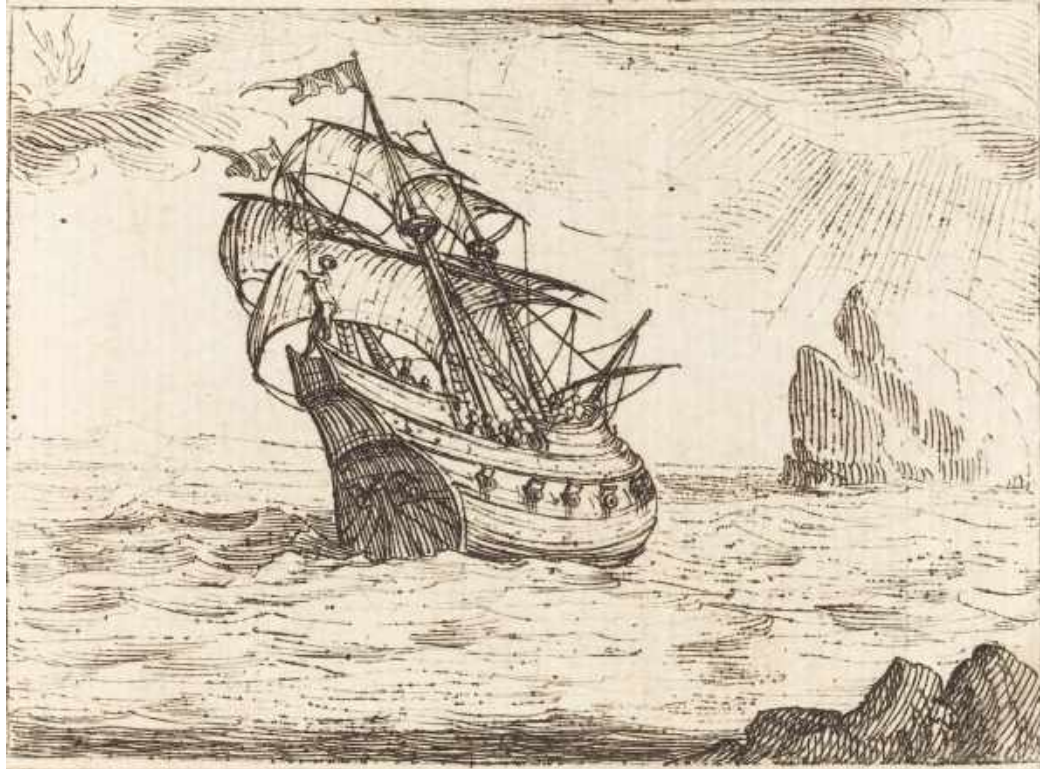


## Salt Cured Lemons

Follow this recipe for salt cured lemons just like the people in Mali and throughout Africa:

### Supplies:

- 5 fresh lemons (washed and dried)
- 1/4 cup salt
- 1 sterilized pint mason jar (fresh out of the dishwasher after a heat dry is sterile)



With an adult's assistance, slice the nubs off both ends of the whole lemon. Cut the lemon into quarters but leave one end connected (it will look a little like a flower with 4 petals.)

Sprinkle 1 T salt in the bottom of your mason jar. Sprinkle 1 T salt on the inside of your

lemon. Press the lemon sliced side down into the mason jar, hard enough to release some of the juice. Repeat with 2-3 more lemons. Make sure the lemon juice/salt mixture covers your lemons completely. If not, juice the remaining lemon and add the juice to the jar. Screw on the lid and set your jar on the kitchen counter. Shake it once a day for 30 days. Try leaving a slice of fresh lemon out for the 30 days that your jarred lemons are pickling. Compare how long the fresh fruit lasts at room tem-

perature to the salted fruit.

After this, salt lemons will keep for up to a year at room temperature. Use in stews, salad dressings, or pasta dishes (there are lots of good recipes online).

## European Shipboard Life

Can you imagine boarding a ship four hundred years ago to spend weeks or months at sea? Life at sea during the sixteenth century was difficult and dangerous, whether you were a French, Spanish, or English sailor. For many, the romance and adventure of seafaring life outweighed the danger in a time when most people never travelled more than a few miles from their birthplace.

As a ship sat in the harbor, it underwent any necessary repairs to get ready for the next voyage, many of which were





done by the sailors themselves. In the days leading up to the voyage, the sailors loaded cargo, supplies, and their own sea chests onto the ship. The sea chests contained the sailors' clothing and any personal possessions, such as whistles, cards, or dice for entertainment at sea. Depending on the purpose of the trip, the hold of the ship might be filled with cargo for sale or trade, or supplies for a long voyage of exploration. In order to sail properly, the cargo needed to provide enough weight to the ship. If the cargo were too light, the ship carried large rocks to make up the difference.

In the way of supplies, the ship carried fresh water, food rations for the sailors, cooking materials, candles, firewood, tools, and anything else that might be needed during a long voyage. This was especially important for ships of exploration, as they could not be guaranteed of a resupply stop anytime soon.

**At last, after weeks of preparation, the ships unfurled their sails and travelled into the open sea. During the early parts of the journey, the rations were fairly generous:**

- **1.5 pounds hard tack biscuit**

- **1 liter of wine (for the Spanish) or 1 gallon of beer or hard cider (for the English and French)**
- **Fresh water (dispensed one ounce at a time)**
- **Rice or dried beans**
- **Salted meat, pork, or cheese**

As the journey went on, the food often turned rancid or became infested with weevils and rats. Deprived of sufficient Vitamin C, the sailors developed scurvy. This disease of malnutrition caused bleeding gums, joint pain, fatigue, and if not treated, death. Shipboard discipline was harsh because of the challenges of having so many

men in such a small amount of space, and often under dangerous conditions. And forget about a good night's sleep—the night was divided into three watches. A sailor's watch was the time during which he was to stay awake and carry out any necessary duties, and all sailors served in one watch during the night. The rest, sleeping on their mats on the deck, had to be ready to move out of the way of the working sailors.

Despite the challenges, life at sea held a romantic attraction. Boys as young as eight years old joined ships as pages, serving either one of the officers or the entire crew. In their later adolescence, they became apprentices. Those who came from families with some money might learn a shipboard trade, such as pilot, while others learned no more than the basic skills of a sailor. These men spent their entire lives at sea, sometimes loving their chosen life, and sometimes fearing for their lives due to weather, disease, or the harsh living conditions.

The British Royal Navy were the first to mass produce hardtack, beginning in the 1660s, but hardtack (also known as ships' biscuit) dates back to ancient Egypt. It was not a delicious food, but it provided protein and nutrients on long voyag-

es. Later in the journey sailors often soaked the biscuits in coffee or porridge to make them easier to chew. Hardtack was designed to last pretty much indefinitely once baked. In fact the Kronborg castle in Elsinore, Denmark is home to a piece of hardtack that some historians date back to 1851!

Here is a recipe for you, with a modern variation to make them a little bit tastier.



## Hardtack

### Original Recipe

#### Ingredients:

1 lb. flour  
1 cup water  
1/2 tablespoon salt

#### Directions:

Mix together the ingredients until it forms a dough. Turn out onto a floured surface and knead until it holds together (kneading means folding and pressing it together repeatedly). Roll the dough out until it's  $\frac{3}{8}$  of an inch thick. Cut into three inch squares and pierce each biscuit several times with a fork. Bake at 400 degrees for 30 minutes.

### Modern Version

#### Ingredients:

1 lb. flour  
1/2 tablespoon salt  
1 cup milk  
4 tablespoons butter

Whisk together the flour and salt. Heat the milk and butter in a saucepan over low heat until the butter is melted. Add the milk and butter to the dry ingredients and stir until it forms a dough. Turn the dough out onto a floured surface and knead until it holds together. Roll out and cut into biscuits. Pierce each biscuit with a fork. Bake at 350 degrees for 30-40 minutes or until the biscuits are golden brown.

Interested in more hands on history including games, art, crafts, recipes, and stories? Visit [Historyunboxed.com](https://www.historyunboxed.com) for ready to use, unit study boxes designed for multi sensory, immersive learners and including all the ready to use supplies for busy educators.

*Find more information about the author of this article [here](#)*





## Teaching Math: It's a Science and It's an Art

By Kathleen Cotter Lawler & Dr. Joan A. Cotter

**What? Teaching math is a science and an art? But isn't math just a bunch of facts and rules to memorize then struggle through ridiculously impossible word problems??**

**Actually, teaching math is a science because so much**

**research has been done and available on how children learn math. Teaching math is also an art because each child is unique which means the instructor needs to tweak and modify the lessons to address individual differences.**

It is so easy to think that the math we learned as a child is exactly what our children and grandchildren need. Yet the math that has been discovered and is being developed is increasing at an amazing rate.

**Today's children need different math than the math of 30 years ago. They need to learn topics in geometry, equations, probability, statistics, fractals, and combinatorics, just to name a few.**

At the same time, the field of arithmetic is less important because of calculators and computers.

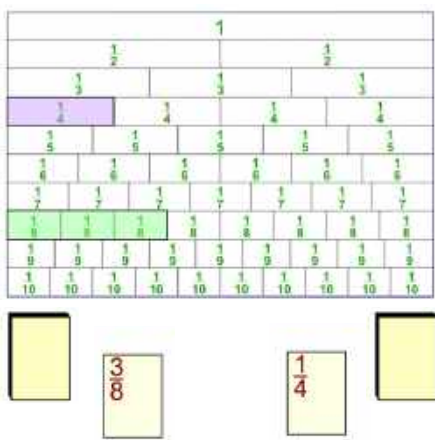
Of course, children need to know their facts, but they do not need to be proficient in adding many multi-digit numbers together or in using long division to divide a large number by a three-digit number. In daily life, these activities are rarely done with paper and pencil. For example, when you want to know your gas mileage, do you write it all out? Or do you whip out your phone and push a few buttons on the calculator app? Calculators and computers are far more effective and efficient.

It is easy to think that the way we learned math, often by rote and without much comprehension, was good enough. On the contrary, we now know that a

deep understanding of concepts removes anxiety, decreases the overwhelming burden of memorizing, makes advanced math easier to grasp, and makes math more exciting.

Some of the reasons we read books to our children are to foster a love of reading, to expand their horizons, and to increase their language. Similar reasons apply to the world of math.

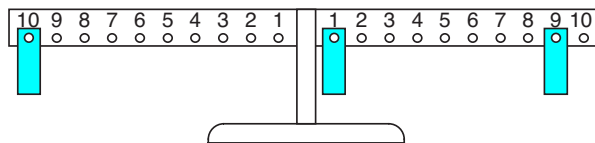
Play math card games to learn and practice the math facts. Develop happy memories and love for math. Remember the game Go Fish where the pairs are two matching cards? Change it up and have the pairs be two cards that equal ten. So if a child has a 6-card in their hand, they will ask for a 4 for a match. This is a great way to learn, practice, or review the facts of 10. It's a whole lot more fun than worksheets! There's even an app for this game: look for Go to Ten.



Remember the game of War where two players each lay down a card then the person

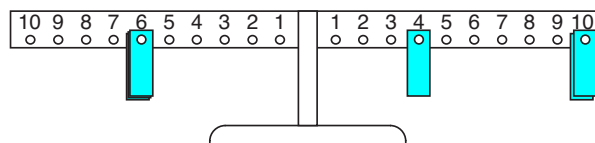
with the higher card takes both cards? Have each person lay down two cards, add them up, then the person with the highest total takes all four cards. It's another "worksheet" for addi-

tion facts! Or how about Faction War? Use fraction cards and compare the two amounts using a linear fraction chart. Again, there's an app for this game too: search for Fraction War.



Apply math facts to situations, whether to hands-on math tools or real life situations. The Math Balance is a great device to discover math, develop understanding, and apply knowledge.

- Place a weight on the 10-peg and ask the child to use two weights on the other side to balance it.
- Options are 1 and 9 (shown above), 2 and 8, 3 and 7, 4 and 6, or 5 and 5. Ask them to find all the options.
- Do not give hints; let the child make their own discoveries. This gives them ownership in their learning. Have them record their findings as follows:  $10 = 1 + 9$ , meaning 10 balances 1 and 9.
- Ask the child to find more ways to balance the Math Balance with three weights. The single weight can be on either the right or left side, varying the numbers. Encourage the child to write down their results.



The Math Balance can also be used for multiplication. Put four weights on the left 6-peg as shown below.

- Ask the child to make it balance by using as many weights as possible on the right 10-peg and place the final weight where needed. Then write the equation:  $6 \times 4 = (10 \times 2) + 4$ , or  $6 \times 4 = 24$ .





Use correct vocabulary. Say ellipse, not oval. Say rhombus, not diamond. Refrain from saying that squares aren't rectangles – they are actually special rectangles with equal sides. Don't say that you can't take 7 from 5 – you can: the answer is  $-2$ . Don't say that the answer, the product, after multiplying is always greater than either factor – not so:  $2 \times 0 = 0$ , which is not greater than 2.

Research has shown that 40% of what a student learns depends upon the teacher. So let's look at your beliefs and attitudes. If you show math anxiety, the child will likely absorb some of that fear and dread. If you view math simply as a bunch of facts and rules to be memorized, the child's math education will be built on a shaky foundation. If you believe the myth of "a math brain," where some just have it and the others don't, the child may decide they do not qualify and stop trying.

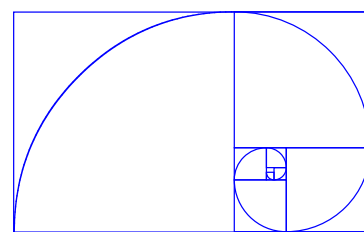
### On the other hand:

- Fortunate is the child whose parent is convinced of the importance of math for daily living, future careers, and understanding of our world.
- Fortunate is the child whose parent views math problems like solving a puzzle, trying different methods, and looking for several solutions.
- Fortunate is the child whose parent realizes there is more than one way to do calculations, some are more efficient than others, and not everything needs to be written down.
- Fortunate is the child whose parent avoids flash cards and timed tests, instead approaches facts using number sense and games.
- Fortunate is the child whose parent knows mastery is achieved through thinking, not blindly following an example or practicing some rule over and over.
- Fortunate is the child whose parent uses math to help their child develop self-confidence and independent thinking.
- Fortunate is the child whose parent understands that some frustration is a normal part of learning and encourages the child to persist.
- Fortunate is the child whose parent does not constantly dis-

pense rewards, verbal or otherwise, causing the child to rely on the parent for assurance, instead of their own thinking, for every step of the way.

- Fortunate is the child whose parent is aware that a child develops concentration by being allowed to concentrate and being protected from unnecessary interruptions.
- Fortunate is the child whose parent radiates joy and helps the child develop a love of mathematics.

Researchers have recently discovered that when people discover beauty in math, their brains light up in the same regions as that of artists when they find beauty in art.

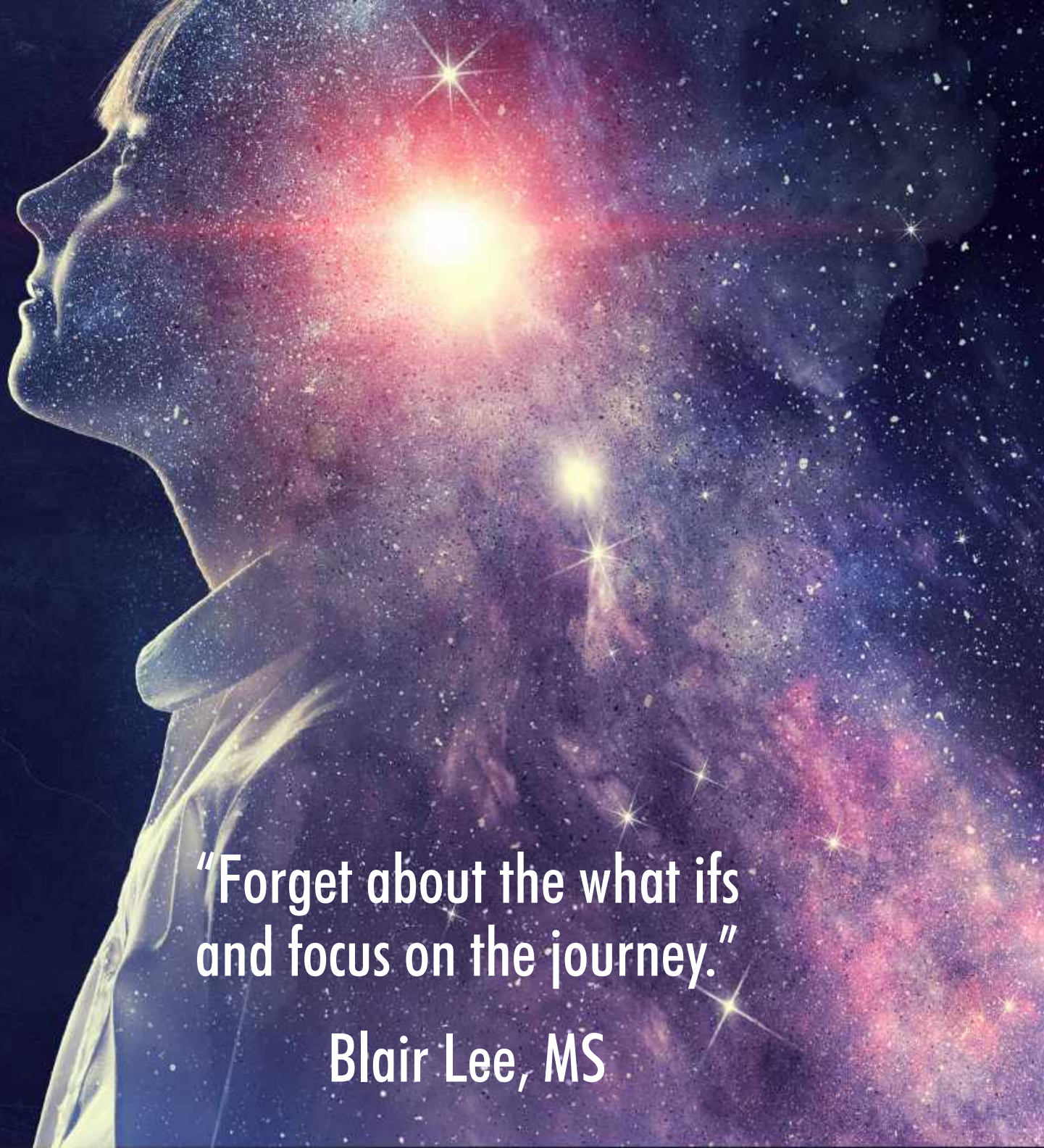


Bonnie, age 13, learning about the Golden Ratio said: "It's just one of these things in life that make you feel satisfied to know."

I hope you and your children have much success in learning and discovering the excitement and beauty of mathematics.

***Find more information about the authors of this article [here](#)***



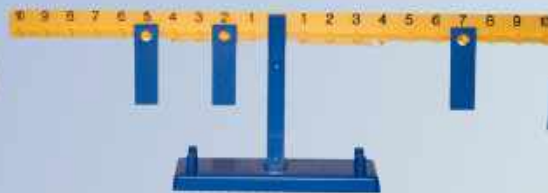
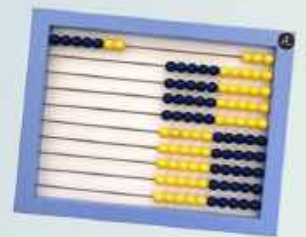


“Forget about the what ifs  
and focus on the journey.”

Blair Lee, MS



**Teaching Math:  
It's a Science and  
It's an Art**



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# Tapping into Online Museum Resources

By Deirdre Palmer, MAT

## How can online museum resources invigorate teaching and learning? How can these educational resources complement and enrich curriculum?

As an example, the [National Gallery of Art](#) in Washington, DC offers free online learning resources for Pre-K through 12th grade educators.

Online lessons, downloadable high-resolution images, and self-paced courses provide educators with tools to help students actively engage with works of art. Suggested looking exercises, essential questions, and activities are designed to encourage students to observe, describe, and reason with evidence as well as think critically and imaginatively. Through conversations around works of art, students can connect to prior knowledge and further their understanding of different subject areas.

### Online Lessons

- Dozens of [online lessons](#) for Pre-K -12 educators are arranged by grade level and broken down into six categories: History, English Language Learners, Math, Science, Elements of Art, and Writing. Each



lesson includes background information, featured works of art, open-ended questions, and activities.

- [Uncovering America](#) connects art and US history in thematic modules that address a range of topics from the Industrial Revolution to the environment to immigration to the Civil Rights Movement. These lessons provide strategies to use works of art as primary resources that help students connect to and build upon their knowledge of US history.
- Lessons designed for [English Language Learners](#) (ELL) build students' comprehension as well as speaking and writing skills. Through looking and discussion prompts, students "read" a work of art and practice their language skills by describing the plot and setting.

Students then reason with evidence and think imaginatively to consider what the plot might be.

- Art can be a vehicle through which students learn [math](#) concepts. Elementary school students practice fractions, addition, and subtraction through an exploration of Wayne Thiebaud's painting *Cakes*. Through careful examination of Alexander Calder's mobiles, middle school students can learn about balance.
- Portraits, sculptures, history paintings, genre scenes, and landscapes can serve as powerful sources of inspiration for creative [writing](#). Lessons designed for 5th-12th grade students include prompts for activities such as composing poems, writing journal entries, and creating first-person monologues.
- [Art Tales for Pre-K](#) pairs children's literature with works of art from the National Gallery's collection. Each unit focuses on a specific artist and



Education. By registering for this free online course, educators have access to lesson plans, immersive activities, and discussion boards. The course also includes demonstration videos of classroom and museum educators facilitating lessons for students of varying ages.

includes questions that will encourage young learners to observe and describe as well as thinking critically and imaginatively. Learners make connections between the book, the artist, and the work of art through a simple, culminating art activity.

## Downloadable High-Resolution Images

On [NGA Images](#), there are more than 53,000 high resolution images from the National Gallery's collection that are available to download free of charge. Create an account to download images, access advanced search options, and create personalized lightboxes.

## Online Course

Through the self-paced course, [Teaching Critical Thinking through Art with the National Gallery of Art](#), educators learn how to use strategies adapted from Artful Thinking pedagogy, developed by [Project Zero](#) at the Harvard Graduate School of

## Virtual Family Programs

During the family program, [Virtual Artful Conversations](#), museum educators lead participants in a 60-minute guided conversation of a work of art from the National Gallery's collection. This program is recommended for children ages 7-12 years old accompanied by an adult.

Take a deep dive into online museum resources and education programs offered by the National Gallery of Art and other museums across the US (and the world!) to discover ways to energize teaching and learning! Also check out these online resources provided by the following museums:

- Exploratorium, [Learning Toolbox](#)
- National Museum of African American History and Culture, [Talking about Race](#)
- National Museum of American History, [History Explorer](#)
- National Museum of the American Indian, [Native Knowledge 360°](#)
- Philadelphia Museum of Art, [Looking to Write, Writing to Look](#)

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*Genesis Flores, art museum educator, leading family participants in Artful Conversations: Color Your Feelings!*





# Super Volcanoes

## An Integrated Science Essay

*Physics, Chemistry, Biology, Earth Science, and Astronomy*

By John Suchocki



In 1971, the young geologist Mike Voorhies and his wife, Jane, were strolling along a gully on the edge of a farm in northeast Nebraska not far from where they lived. Since he was a little kid, Mike had been fascinated by fossils, having found his first ancient camel tooth at the age of 8. On that day by the gully he happened to notice what looked like an animal skull protruding from the eroding edges. Within minutes, he and Jane unearthed not just

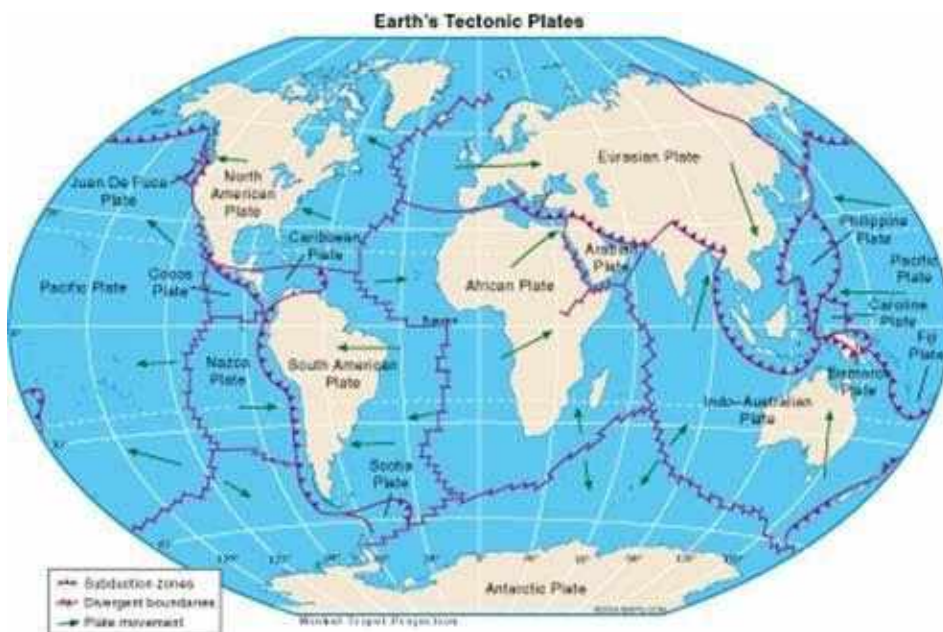
**the skull but the entire skeletal remains of a 12 million year old rhinoceros. They had discovered what has since become known as the Ashfall Fossil Beds of Nebraska.**

Further explorations revealed the remains of hundreds of large vertebrate animals who, around a water hole, had died together upon being buried by a meters thick layer of ash. The source of this ash? A supervol-

cano a 1000 miles to the west—an earlier version of the very same supervolcano that now resides beneath Yellowstone National Park in northwest Wyoming.

As one learns from the study of Earth Science, the outer layers of Earth are broken into tectonic plates, looking much like the cracked shell of a hard boiled egg. About 95% of Earth's volcanoes arise along these





**We all have observational skills. Part of what becoming a scientist means is training those observational skills to a deeper level. Mike Voorhies was trained in what to look for with fossils. Similarly, as a graduate student, Hannah Shamloo, was being trained in what to look for within the micro-crystals found within volcanic ash.**

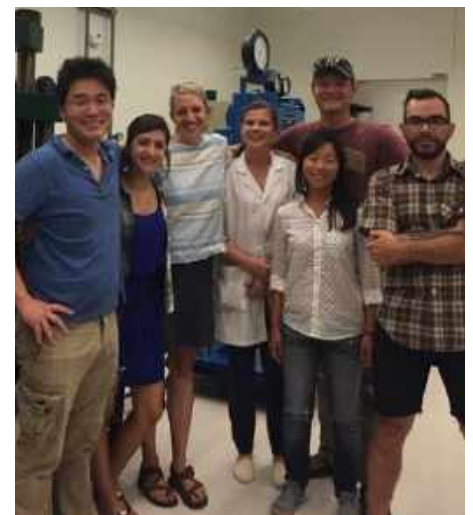
cracks. These volcanoes are certainly destructive, but they pale in comparison to the fewer “supervolcanoes”. These supervolcanoes tend to form not on the edge, but in the middle of a plate over what we call a “hot spot”, which is where there is a direct line between Earth’s molten core and the surface. Yellowstone resides over just such a hot spot, which explains its many natural hot springs along with frequent earthquake activity.

The Yellowstone super volcano has a history of blowing up around every 600,000 years. Notably, the last mega-explosion occurred about 630,000 years ago, which means that we are due for another mega-explosion at any time. Yellowstone, however, is one of the most closely studied and monitored volcanoes around the planet. Over the next 100,000 years, the

chances of another explosion are quite good. The chances for this happening over the next century, however, are exceedingly small. As of this writing, the Yellowstone super volcano is showing no unusual signs of impending doom.

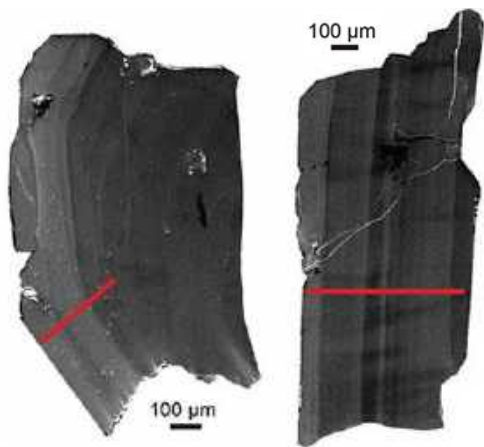
But that doesn’t stop scientists from wanting to learn as much as we can about this volcanic system. In 2017, for example, geology graduate student Hannah Shamloo, and her advisor, Christy Till, from Arizona State University, published research showing that the build up to the last major eruption of Yellowstone may have occurred over a matter of only years or decades, as opposed to thousands of years. But how exactly did they come to this conclusion? After all, we’re talking about a supervolcano that erupted some 630,000 years ago.

Hannah and her team first traveled to Yellowstone to collect samples of ash from the layer corresponding to the last mega-explosion. Back in the laboratory she used instruments to measure the chemical composition of micro-crystals



known as phenocrysts—tiny crystals that form as magma cools slowly beneath the volcano prior to eruption. She had learned that as these crystal grows, trace elements, such as barium, Ba, get embedded





within the crystal. The gradient from the center of the crystal to the outer edges, thus provides a storyline of the changing conditions beneath the volcano prior to eruption.

If there were no changes in the conditions of the magma over time, then the chemical composition would be the same throughout the crystal. What she found instead were chemical changes that showed two things: a rapid increase in the temperature of the surrounding magma and an increasing amount of a crystallized barium.

The problem with this is that with increasing temperatures, barium tends to stay out of the crystal and within the molten magma—yet with higher temperatures, they found the barium content of the crystals actually increasing! Further analysis also showed a relatively low content of water within the crystals.

This was telling because a major mechanism for volcanic explosions is the presence of large amounts of water, which helps in the building of pressure.

Here was important evidence within these tiny phenocryst crystals. And like a thoughtful Sherlock Holmes, they realized this pointed to a likely alternate mechanism of the last mega-explosion. Their observations within those phenocrysts could be explained by the rapid influx of a large quantity of magma from deep below over not thousands of years, by potentially only decades. If true, it means that present-day Yellowstone could go from its current conditions to a major explosion within this century.

As Hannah and her advisor are quick to point out, much more research is required to support or refute these conclusions. Further, the subterranean

magma chambers, as far as we can track, are currently not undergoing major movements. Thus, geologists estimate chances of a mega-explosion occurring within a year to be about 1 in 760,000. The slow release of lava, which would devastate only the area around the national park, has a greater chance of occurring at about 1:10,000.

The main point to all of this is that we live on a planet that is very much alive. When it comes to volcanoes, earthquakes, tsunamis, wild fires, tornados, hurricanes, and other destructive forces, the more we can learn about these systems, the better we are able to prepare ourselves.

But beyond the benefit of preparing for potential disaster, there are many other benefits to learning about how nature works. Perhaps foremost are the perspectives we gain. There are



the why questions: Why is the sky blue? Why is the Sun hot? Why does water take so long to boil? There are also the “how” questions: How do we know dinosaurs lived over 65 million years ago? How do we know an antibiotic won’t cure a viral infection? How do we know increasing atmospheric carbon dioxide levels are affecting global climate?

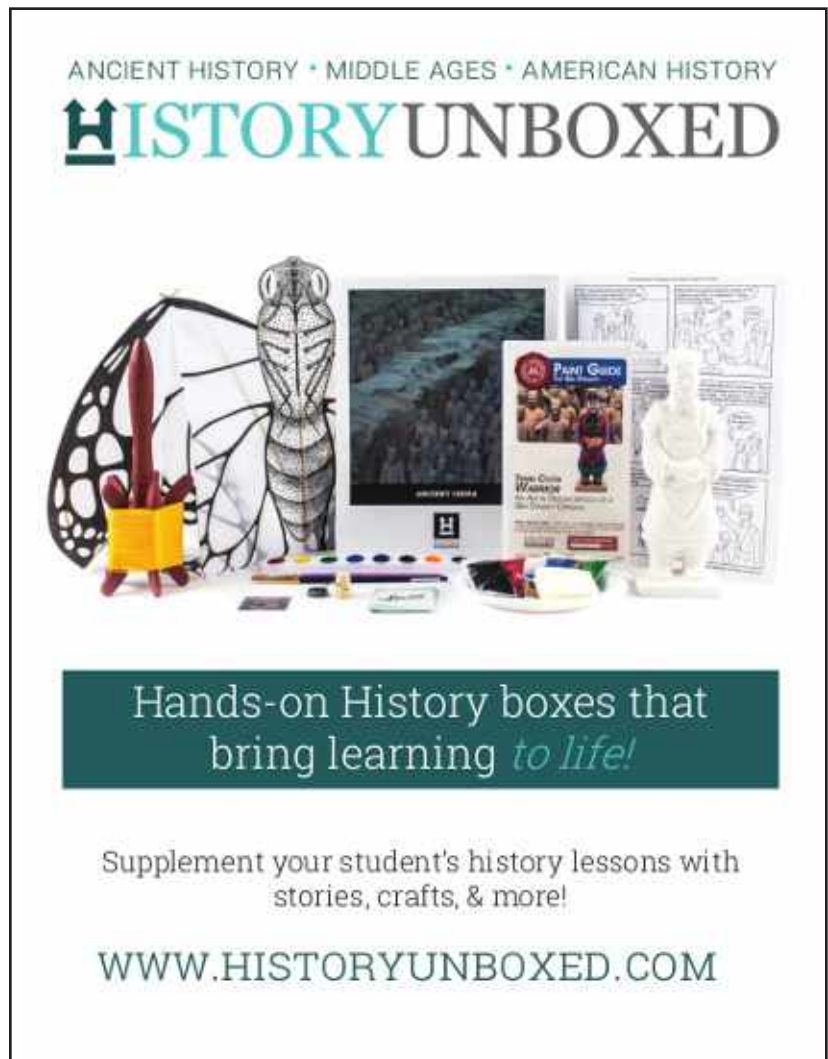
**Science is a powerful tool for answering these sorts of questions. As exemplified by the research into supervolcanoes, science is becoming increasingly interdisciplinary, or in other words “integrated”.**

To study her field of earth science, Hannah Shamloo needed to know how it is that magma is hot and generally rises upward (Physics). She needed to know how crystals precipitate from magma and how chemical composition can serve as a fingerprint in her detective work (Chemistry). And much of her inspiration arises from wanting to help protect ecosystems (Biology). And by no coincidence, her research will help in the study of extraterrestrial worlds, such as Io, a highly active volcanic moon of Jupiter (Astronomy). Integrated science is good science. It’s also enjoyable science and very much related to our everyday lives.

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- *Yellowstone Volcano Observatory*
- *Paleo Sleuths – Digging Deeper Website* featuring Mike Voorhies, Professor Emeritus

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## Pursuing Your Dreams While Homeschooling by Brian Fitzpatrick

“Homeschool? What’s home-school?” we were so confused when our son’s teacher suggested looking into this alternative to in-class education. Already emotionally drained in the face of our son, Tyler’s, Obsessive-Compulsive Disorder (OCD) diagnosis and ongoing struggles in first grade, we were not prepared for a solution of removing him from school. How would he learn what he needed to thrive in life? How would he make friends? Who would teach him? My wife, Teresa, and I felt absolutely defeated. This was the late 1990’s, and very few resources were readily available on the subject.

However, Tyler’s symptoms had steadily increased and had grown debilitating at school. He feared he’d break a rule; feared he’d accidentally say a curse word; feared he’d accidentally

make finger-guns. He stopped eating at school, and stopped socializing. He was sinking. Our urgency was palpable.

Thankfully we had found an excellent therapist whose own daughter was experiencing OCD as well, giving her a special insight into Tyler’s symptoms. Tyler’s teacher and therapist spoke on the phone to come up with a plan. We were so grateful for the extra time each put in to help him. So when the homeschool suggestion came, we were stunned, but we took it seriously. To help Tyler and give him a much needed pause, we chose to pull him out of school.

Our homeschool journey began with a very rocky start. We began with a “school-at-home” model complete with a classroom, curriculum, set hours, and all the frustrations of regular school. I’d often come

home from work to find them both in tears. It was not a good beginning.

**We adapted and changed methods. Over time we discovered child-lead education worked best, and their days together became filled with field trips, park days, and exploration. We found our path. On top of that, Tyler’s therapist equipped him with wonderful tools to help him overcome the OCD trials that would be with him his whole life.**

Prior to our new adventures in homeschooling, Teresa had been a talented floral designer and I had dreams of being a writer for a living. In fact, I’d been working toward this dream since childhood- when I accidentally watched the horror classic, “Night of the Living

Dead,” at age 7. After a sleepless week, I became fascinated that I could be so frightened, and yet be perfectly safe. My mother suggested I write a story, and as I put pen to paper, my path was set.

When Tyler was born we crunched the numbers and realized our best path forward, especially for Tyler, would be for me to continue my day job while Teresa would stay home with our son. Full disclosure- I was a bit jealous. When Tyler was just two months old I received a cancer diagnosis. It was very curable, but I ended up being off work for three months for surgery and radiation treatments. In that time I bonded with Tyler deeply, and enjoyed a special time with family most people don't get to experience. I found it very difficult to return to regular life after that.

Meanwhile, I kept at my writing dream by typing away at screenplays late at night and on weekend downtimes. Teresa set aside floral design and focused all her creativity toward making the best homeschool experience for Tyler possible. And she excelled in her craft.

Our plan worked well, and our family thrived. Teresa put her entire self into the care and education of our son, while I continued to work, support

them on their journey, and spend time together whenever we could. As Tyler grew older we found homeschool groups that provided amazing activities like camping trips, and annual expos. We joined in wholeheartedly. Eventually, Teresa became a board member for the group and participated in shaping their events, web site overhaul, and outreach programs.

Meanwhile, I began to find networking events for screenwriters online and in person in Los Angeles. I inflicted tremendous pressure on myself to create a better life for us, and felt the best path toward financial freedom was to sell screenplays and build a career in the entertainment industry.

As Tyler reached adolescence, Teresa and other homeschool moms joined forces to create a group for teens that focused entirely on social events. So many

groups existed for educational endeavors and field trips, but we were hard-pressed to find a teen group solely for socializing. Our group held monthly pizza parties, beach bonfires, dances a few times a year, and midnight movie release events.

And at one point, we hosted a prom for southern California teens. Teresa played a huge part in the planning and I was so proud of her incredible efforts.

**That's not to say we didn't have struggles and obstacles along the way. Like everyone else, life can throw curve balls and we certainly had our share. Financial strife, illness, career frustrations- normal life, but we remembered to stick together, face challenges together, and we came out stronger in the end.**





Tyler graduated high school and moved on to college, and soon Teresa stepped back from both the teen group and the board from the homeschool group. Her time was freed up for personal pursuits. She returned to college, taking art classes, and soon developed a love of jewelry making; smelting, casting, designing, welding. She absorbed it all. She entered the Fullerton College art show twice with stunning pieces. She had one of her necklaces commissioned by a professional musician wanting one of her own. And this gave Teresa an idea.

During this time, I had converted my award-winning science fiction script, *Mechcraft*, into a novel and released it in 2018. Marketing the book, and writing the sequel occupied much of my free time, but we always made sure to lock down some family time together. Could be a movie night, or a favorite TV show; we always found time together.

Now Teresa aims to start her own jewelry making business, and I know she will make it a success. She has the skill, the talent, and the drive to create something wonderful.

I increased my writing pursuits and signed with a new publisher this year that wants to re-release *Mechcraft*, as well

as publish the sequel, *Mechcraft: Disruption*, on May 4, 2021. Additionally, I have a horror screenplay in early development with a production team being formed. And book 3 in the *Mechcraft* trilogy is outlined and ready to write.

Tyler has now graduated from Chapman University with a B.A. in Digital Art, and is forming his own video game company with a group of talented friends who worked on his award-winning game demo for school.

Our years in the homeschool community really shaped our creative lives. Teresa learned she could handle tough decisions, stay focused on details with hosting large events, and have confidence in her abilities.

And I learned how to balance work life, family time, homeschool organization activities, and still maintain writing goals.

It boils down to perseverance. Never giving up on the dream, but also being open to the varying pathways to reach the goal. Teresa and I both learned valuable lessons along the way, and wouldn't change a thing. The trials and triumphs both shaped us.

In the end, homeschool not only changed Tyler's life for the better, but also put Teresa and me on a path to tap into our own creative endeavors and pursue our dreams. It is the best of all worlds.

***Find more information about the author of this article [here](#)***



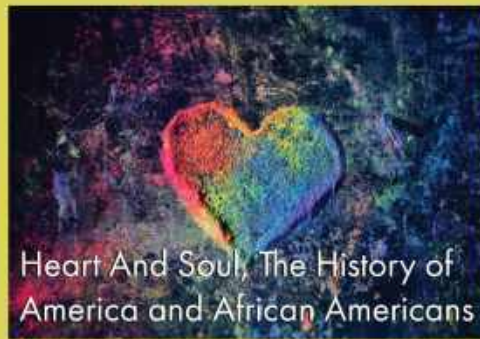


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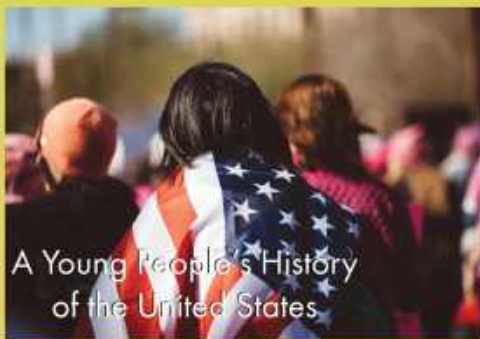
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# Contributor Bios

**Blair Lee**, MS is the author of *The Science of Climate Change: A Hands-On Course*, the primary author for the critically acclaimed *REAL Science Odyssey Series*, and co-author of *Project-Based Learning: Creating a Modern Education of Curiosity, Innovation, and Impact*. Through her speaking and writing, Blair's goal is to empower educators to dare to be innovative and create something unique and academically-rich when handcrafting their students' education. Blair is the founder of Secular, Eclectic, Academic Homeschoolers and SEA Books & More. In 2020, Michelle Parrinello-Cason and Blair started *SEA Online Classes*. The classes being developed are a different kind of online class that honor learning in a way that scaffolds the specific needs and goals of each student.

**Beth Herrild** has a BS in Fine Arts and a Master's in Whole Systems Design. When her three children entered elementary school, she was appalled at the lack of quality visual arts education. So, she became an art docent for over fourteen years, teaching elementary through high school art. In late 2016, she left her full time job and started her business, *Outside the Box Creation*. She believes that you don't have to be a great artist to do art with your kids. In fact, discovering art together actually offers your child more freedom.

**Dr. Sabrina Weiss** specializes in developing theoretical models that represent the ethical and social dimensions of issues at the intersection of science, technology, and society. Topics of interest include gender and sexuality, discourse theory, bodies and cyborgs, bioethics, food ethics, and innovative pedagogies, as well as the institutional and change dimensions affecting those areas. Dr. Weiss earned a B.S. from Stanford's Science, Technology, and Society program, an M.S. in Bioethics from Albany Medical College, and a Ph.D. in Science and Technology Studies at Rensselaer Polytechnic Institute and is a former U.S. Naval Officer (ROTC) who served overseas in Japan and at the Office of Naval Research. An interdisciplinary and international scholar, Dr. Weiss has taught at Rochester Institute of Technology, which houses the National Institute for the Deaf, and at Leuphana University in Lüneburg, Germany. Dr. Weiss is a coauthor of *Worlds of Science-Craft: New Horizons in Sociology, Philosophy and Science Studies* (2009).

### **Michelle Parrinello-Cason**

has a Ph.D. in English with an emphasis in rhetoric and composition. Her research interests include pop culture, the history of writing instruction in American colleges and universities, developmental writing, online education, and alt/dis. Michelle lives in St. Louis, MO where she homeschools her two children. She helped found and now serves as a governance committee member for a secular homeschool cooperative that offers educational experiences to learners across the city. She is the founder of *Dayla Learning*, a source for “homeschooling the humanities with humanity” that provides online classes, teaching materials, and resources. She is also the co-founder of SEA Online Classes, a platform that focuses on engaging, meaningful, hands-on online learning experiences.

### **Samantha Matalone Cook**

is an educator, historian, writer, maker, and speaker. She has almost three decades of experience in education and program development, and has worked with both small and large organizations to create educational programming that centers and connects the learner to concepts and skills. She has taught in classrooms and in private workshops, mentored other educators, and worked for and with many museums including the Smithsonian. She also finds new adventures and manages mischief every day with her two teens and one preteen, all home educated; the oldest of whom has fledged to college. Currently, her favorite games are *The Quiet Year*, *Talisman*, *Code Names*, *Azul*, *Minecraft*, *Assassin’s Creed: Valhalla*, *The Legend of Zelda: Breath of the Wild*, *Moss*, and *Beat Saber*. To see her past and current projects, including her blog, her book on Project-Based Learning, her Harry Potter-themed book studies, Pandia Press History Odyssey curriculum, and her course offerings through SEA Online Classes, please visit [www.samanthamatalonecook.com](http://www.samanthamatalonecook.com)

### **Ellen Crain**

has been homeschooling in the Twin Cities metro area for a decade, and is trained in administering and proctoring the MAP® and MPG® as well as interpreting the results.

### **Elizabeth Hauris**

is a second generation veteran homeschooler of seven children and a serial entrepreneur. After experiencing living history first hand as a reenactor and educational program director at Claude Moore Colonial Farm she embarked on a mission to make hands on, multi sensory historic experiences available to students worldwide through *History Unboxed LLC*. Kinesthetic, ready to use history boxes help students and educators develop a deep and lasting relationship with the past while secular history materials empower educators to incorporate history discussions in line with their families outlook and beliefs.



**Kathleen Cotter Lawler** is the daughter of Dr. Joan A. Cotter, author and creator of the *RightStart™ Mathematics* program. She is one of the first children to grow up under the RightStart principles. Kathleen has a degree in Home Economics and a minor in Business from the University of Minnesota and has two Masters Degrees from the University of Mary in Bismarck, North Dakota. Kathleen is the mother of four children ages 25 to 29 and one delightful grandson. Three of the Lawler children graduated from North Dakota State University and the youngest graduated from Minnesota State University Moorhead.

Kathleen is currently responsible for curriculum development, marketing, and sales. She is involved with curriculum development and has written or co-authored fifteen manuals. Kathleen travels all across the US and Canada, sharing the RightStart mission of helping children understand, apply, and enjoy mathematics. In her spare time, Kathleen designs and creates quilts and is re-learning how to unicycle.

You may contact her at [Kathleen@RightStartMath.com](mailto:Kathleen@RightStartMath.com) or by calling 888-272-3291.

**Dr. Joan A. Cotter** received her BSEE (electrical engineering) from the University of Wisconsin Madison and MACI (curriculum and instruction) from College of St. Thomas (now University of St. Thomas, Minnesota), and earned her Ph.D. from the University of Minnesota (mathematics education).

Joan worked at an engineer at Univac (now Unisys), quitting when her children were born. She taught her three children at home before and after school and during summer vacations. To help them learn their basic arithmetic, she devised card games that became the basis of her first book, *Math Card Games: 300 Games for Learning and Enjoying Math*.

Joan started a Montessori school and taught children, ages 3-6 years, as a Montessori teacher. She studied the Suzuki method and used it to teach violin and piano to young children. She also tutored children with learning problems and taught middle school mathematics.

Dr. Cotter designed the double-sided AL Abacus and wrote *RightStart™ Mathematics*, a comprehensive K-4 mathematics program that incorporates visualization, the AL Abacus,

and math card games. The RightStart™ curriculum is an outgrowth of her doctoral research.

Joan and her husband, Al, have three adult children, five grandchildren, and one great-grandson.

You may contact her at Joan.Cotter@RightStartMath.com or by calling 888-272-3291.

**Deirdre Palmer** has worked as a museum educator with school tours and docent programs at the National Gallery of Art since 2006. She develops and conducts school tours for students 4 years old through 12th grade and manages a corps of 85 volunteer docents. Deirdre also teaches family programs, facilitates professional development sessions for teachers, leads programs for the general public, and works with the Gallery's outreach program, Art Around the Corner. She has a BA in Art History from the University of North Carolina-Chapel Hill and a M.A.T. with a concentration in museum education from The George Washington University. Deirdre can be reached via email at [d-palmer@nga.gov](mailto:d-palmer@nga.gov).

**John Suchocki** is author of *Conceptual Chemistry* as well as a coauthor of other “conceptual” science textbooks used by colleges and high schools world wide. He obtained his Ph.D. in organic chemistry from Virginia Commonwealth University, which was followed by a two year postdoctorate in pharmacology at the Medical College of Virginia. He taught chemistry at the University of Hawaii at Manoa and then at Leeward Community College where he received tenure and was highly active in the development of distance learning programs and student-centered learning curricula. In addition to authoring textbooks, John teaches as a visiting professor at various colleges including St. Michael’s College, Texas Tech University, and most recently Weber State University. John is founder/ CEO of *Conceptual Academy* an online video-centered science learning platform now used by a growing number of colleges and high schools, including home-schools and co-ops. John is a regular contributor to the SEA magazine featuring meaningful hands-on science activities that can be performed at home. He maintains the popular Conceptual Academy YouTube channel,

which features select Conceptual Academy science video lessons for the general public. He is co-host of the Conceptual Academy Big Picture Podcast series with his wife Tracy, who has a strong background in environmental science and childhood education. On the side John is the author and illustrator of science-oriented children’s books found at [Styraki.com](http://Styraki.com). An avid songwriter he also produces music, which can be found through [JohnAndrew.net](http://JohnAndrew.net). Mostly, he is the proud husband to Tracy with their three adventuresome children: Ian, Evan, and Maitreya now all within their college years.

**Brian Fitzpatrick**, imagine being just 7 years old and accidentally watching the horror classic, *Night of the Living Dead*. For author, Brian Fitzpatrick, that’s precisely what happened. It became the catalyst for a life-altering path forward. After a week of sleepless nights, he became fascinated with the idea that he could be so scared, yet be perfectly safe. Fitzpatrick swiftly put pen to paper and has been creating horror and science fiction tales ever since. Fitzpatrick’s nanotech science fiction novel, *Mechcraft*, was published in 2018. The sequel, *Mechcraft: Disruption* will be published on May 4, 2021. And a related short story, *Mechcraft: Sophie’s Gambit*, was released in the *Passageways* anthology on 12-11-20. The third novel in the trilogy, *Mechcraft: Cataclysm*, is being written at this time.

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