



# Teaching with the 2018 Orbis Pictus Books



## Full “Steam” Ahead: Orbis Pictus, STEAM, and Design Thinking

### Focal Texts:

- ***Dazzle Ships. World War I and the Art of Confusion*** written by Chris Barton and illustrated by Victo Ngai
- ***Isaac The Alchemist: Secrets of Isaac Newton, Reveal'd*** by Mary Losure
- ***Life on Surtsey. Island's Upstart Island*** written by Loree Griffin Burns
- ***Maya Lin: Thinking with Her Hands*** by Susan Goldman Rubin
- ***The Music of Life: Bartolomeo Cristofori & the Invention of the Piano*** written by Elizabeth Rusch and Illustrated by Marjorie Priceman
- ***The Quilts of Gee's Bend*** written by Susan Goldman Rubin
- ***The World Is Not A Rectangle: A Portrait of Architect Zaha Hadid*** written and illustrated by Jeanette Winter

### Teaching Ideas & Resources:

#### Across All Books:

In these books (and perhaps others), explore where women are featured (and/or omitted) as agents in the creative and scientific processes. Looking at both the verbal and visual language,

- *What are they doing (or not doing) and saying (or not saying)? What does the process look like?*
- *How are they described and/or depicted?*
- *Compare and contrast what is in the primary narrative and what is in the backmatter. What are the implications of what, where, and how the information is shared?*

**A New Way of Thinking:** Each book showcases individuals or groups that approached a problem employing imagination, logic, scientific principles, empathy and perseverance to arrive at solutions that were both inspired and innovative.

**Art as Function:** These books explore the practical uses and aesthetic experiences of a range of inventions and ideas, and the artistic expression found in everyday objects and innovative designs.

#### Ideas for Specific Books:

- Pair ***Dazzle Ships: World War I and the Art of Confusion*** with The Public Domain Review: “Dazzle Ships, an archive of black-and-white and color photos. Students may be interested to explore the “two dozen young women” worked on the designs in England; in NYC it was the “Women’s Camouflage Corps.” What do we know about these groups?

Have students create their own illusions with **Optical Illusions: Make Your Own Awesome Illusions** (DK Publishing, 2017). The book includes step-by-step instructions for making a range of optical illusions from the simple to the complex, and includes a packet of cards to fold, bend, etc. to create 3D illusions.

- With ***Isaac the Alchemist: Secrets of Isaac Newton, Reveal'd***, consider introducing biographies of Newton's contemporaries and later scientists who built on his work. Information on alchemy, the Scientific Revolution, the scientific method, should also be made available to students. Other biographies of Isaac Newton include Kathleen Krull's *Isaac Newton* in the "Giants of Science" series (Viking, 2006), and, on a lower reading level: Janet Pascal's *Who Was Isaac Newton?* (Turtleback, 2014) and Kathryn Lasky's *Newton's Rainbow* (FSG, 2017). For a fictional look at the period and alchemy, try Karen Cushman's *Alchemy* and Maggie Swann (Clarion, 2010)
- When reading ***The Music of Life: Bartolomeo Cristofori & the Invention of the Piano***, tap into listening experience of "The First Piano": Joseph Hayden and Wolfgang Amadeus Mozart were among the first composers to experiment with and explore the piano's potential, and musical artists continue to do so today. See Elizabeth Rusch's discography (p. 42, *The Music of Life*) for additional listening suggestions to accompany the story. Other related texts include *The Music Box: The Story of Cristofori* (Guy and Lacy, 1998) by Suzanne Guy and Donna Lacy, *Beethoven Lives Upstairs* by Barbara Nicol (there is also a family film of the same name based on the book). A lively fictional picture book account of a composer whose work explored the full range of the piano's potential.

The author's fascinating endnotes contain information on the sources she chose to go with when conflicting material existed, and highlight the artifacts of Cristofori's thinking, both topics worthy of closer examination. In addition, the concept of patronage may be one that is unfamiliar to students. What did this look like and how did it impact the arts in during Cristofori's lifetime?

- In ***Maya Lin: Thinking with Her Hands***, Susan Goldman Rubin's approach to Lin takes a material focus in chapters titled: "Granite," "Water," "Wood," "Earth," etc. How does this structure enhance our understanding of the artist? Students can explore how and where the artist uses each of these materials, the symbolism embedded in their use, how they interact with other aspects of the structure or environment (light, the seasons, etc.). Pair this book with *Maya Lin: Artist-Architect of Light and Lines* by Jeanne Walker Harvey (lower reading level) for an interesting contrast and comparison of how two authors approach the same subject. Or perhaps use this text to launch multiple curricular uses and explorations in women in art, art history, architecture, and American history.
- The lives and work of the Gee's Bend community featured in ***The Quilts of Gee's Bend*** by Susan Goldman Rubin are intimately connected to a number of topics that merit further exploration: folk art, voting rights, civil rights, enslavement, and sharecropping. There are also numerous math connections to be made to quilt design, which the author touches upon. How quilting has flourished in other communities and cultures from the Amish to the Hmong (and their fascinating connection), can be explored, along with other types of fabric and home arts that served multiple purposes. Ask students to describe a functional object in their home that also expresses an artistic or clever design. What is it made of? In what way is it "artistic or clever"? Can they discover information about the creator? Ask them to try their hand at creating an artful, useful object.

Alternatively, if students are interested in learning more about the women and their quilts, have them explore related texts and consider possible prompts such as *Stitchin' and Pullin' a Gee's Bend Quilt* by Patricia McKissack (Random, 2008) which offers a lower-level reading experience about the community of quilters. Watch this [NY Times Mini-Documentary](#) and hear from the actual quilters in *The Quilters of Gee's Bend*.

Alabama Clip 1, Video. 93 sec., and [Gee's Bend: From Quilts to Prints](#). Video. 15 min. 2014. How are individual styles expressed in the quilters' works? *With Needle and Thread: A Book About Quilts* by Raymond Bial (HMH, 1996). Ask students to note which cultures are and are not included in this book. If students are interested creating their own quilt squares, refer them to, "Making a Quilt Square" p. 42 in *The Quilts of Gee's Bend*.

- For the aspiring architects, naturalists, and linguists in your classroom, after reading ***The World Is Not a Rectangle: A Portrait of Architect Zaha Hadid*** by Jeanette Winter they can explore the natural elements that her individual structures reference in shape, form, or design. In drawing those parallels, have students reflect on how the author's rich use of similes, creates and enhances these comparisons. Provide students with photos of Hadid's work or refer them to the illustrated index in the *Rectangle's* back matter as well as work by other architects (including Maya Lin). Ask them to look carefully at the images and write their own similes. Have them compare and contrast the different styles of Hadid and Lin. Finally, have them research other architects such as ones found in *13 Architects Children Should Know* by Florian Heine.

#### Extending Beyond the Books:

- Have students consider what explorations or experiments they do within their homes or communities. How do those explorations embody STEAM or Design Thinking processes?
- Interview community-based scientists, artists, architects, and musicians. What do they recall doing during their childhood that, upon reflection, is connected to what they do professionally?
- What conditions do students believe are optimal for their creative inquiries and innovations?
- Explore what we now consider to be art that was originally used for everyday living at home. What contributes to the shift from the "science of life" to the "art of living"? Who benefits from such shifts? How does it shape our thinking about the art /tool and artist/inventor? Furthermore, what art do we currently have that we believe will become a necessary tool for daily living, and vice versa? Why might that art or tool shift in type or purpose?

## A Sense of Place

#### Focal Texts:

- ***Danza!: Amalia Hernandez and Mexico's Folkloric Ballet*** written and illustrated by Duncan Tonatiuh
- ***Grand Canyon*** by Jason Chin
- ***If Sharks Disappeared*** written and illustrated by Lily Williams
- ***The Whydah: A Pirate Ship Feared, Wrecked, and Found*** by Martin W. Sadler
- ***The World is Not a Rectangle*** by Jeanette Winter

#### Teaching Ideas:

- [The Classroom Bookshelf](#) entry for **Grand Canyon** has many fantastic teaching ideas.
- What happens when you change who or what lives in a place? ***If Sharks Disappeared*** by Lily Williams invites students to grapple with this idea when she proposes that if sharks disappear, humans may too. After sharing the book and discussing the trophic cascade that Williams proposes will happen if sharks disappear, challenge your students to play “what if..”? How would other places or situations change if an important species or element disappeared? Younger students may use illustrations to show their “cascade”. Asking older students to provide evidence for what they propose will happen in a cascade when some element of a place disappears grows the need for research. It would be the perfect need created to ask students to learn enough about an ecosystem and the organisms that live in it to defend their ideas with evidence.

Lily Williams’ film helped us learn about the science connected to the “trophic cascade” introduced in the book. [Finconceivable](#) (Short film by Lily Williams on her website.)

A beautiful companion film to *If Sharks Disappeared* and trophic cascades is [How Wolves Change Rivers](#) by Sustainable Man. It provides stunning cinematography in a video that explains how the reintroduction of wolves to Yellowstone National Park started a trophic cascade that resulted in the change in the shape of the river that runs through the park.

- In ***The World is Not a Rectangle***, Jeanette Winter recounts Zaha Hadid’s life as an incredible architect who relied heavily on the natural world for inspiration as she designed some incredibly original places. Hadid died fairly recently and *The New York Times* shared two interesting articles about some of her most recent projects. [Zaha Hadid’s Think Tank](#): Environmental Beauty and Efficiency, New York Times  
[Building Zaha Hadid’s Bold Afterlife](#), New York Times

*The World is Not a Rectangle* provides a tempting introduction to Hadid’s work, and how she was influenced by natural places in creating her architecture. Invite students to look more closely at some of Hadid’s buildings that are shared in the back of the book. Even a simple [Google Images search](#) yields images you can’t look away from. Because Hadid’s buildings are all over the world, there is a wonderful opportunity to introduce students to geography through where her buildings are, and how often her buildings reflect the natural world of that country.

Ask students to go on a walk with you and look closely at their own place. Return to invite students to design a school or house that reflects aspects of the local environment that they noticed. In a science study of ecosystems, challenge students to design a building that incorporates a unique aspect of a certain ecosystem after students learn extensively about that ecosystem.

## National, Cultural, and Personal Identity

### Focal Texts:

- ***Chef Roy Choi and the Street Food Remix*** by Jacqueline Briggs Martin and June Jo Lee and illustrated by Man One
- ***Danza!: Amalia Hernandez and Mexico’s Folkloric Ballet*** written and illustrated by Duncan Tonatiuh

- ***Fault Lines in the Constitution: The Framers, Their Fights, and the Flaws that Affect Us Today*** by Cynthia and Sanford Levinson
- ***Her Right Foot*** written by Dave Eggers and illustrated by Shawn Harris
- ***Maya Lin: Thinking with Her Hands*** by Susan Goldman Rubin
- ***The Quilts of Gee's Bend*** by Susan Goldman Rubin
- ***The World Is Not A Rectangle: A Portrait of Architect Zaha Hadid*** written and illustrated by Jeanette Winter

## Teaching Ideas & Resources:

- [The Classroom Bookshelf](#) entry for ***Fault Lines in the Constitution*** has many fantastic teaching ideas.
- Use ***Fault Lines in the Constitution*** and ***The Quilts of Gee's Bend*** to launch an investigation on our nation's treasured artifacts. Students can visit museums virtually (e.g. [Smithsonian](#), [National Museum of African American History](#), [National Museum of the Native American](#)), research artifacts, compare and contrast them, and select some to showcase in a related unit of study. Alternatively, along with these books and ***Her Right Foot***, students could explore museums through the lenses of perspective and voice to see how certain museums such ones mentioned above and [United States Holocaust Memorial Museum](#) and [Ellis Island National Museum of Immigration](#) showcase a certain population that endured oppression or hardship. Some of these museums offer an immersive experience for their visitors, giving them real identities as they walk through the exhibits. Students could then design a similar type of museum for a real audience. Whose stories might they showcase? What artifacts would they include? *How to Build a Museum* by Tonya Bolden, a previous Orbis Pictus Honoree, is another great companion book for these ideas.
- Pair ***Maya Lin: Thinking with Her Hands*** with ***Her Right Foot*** to explore the power of monuments. Why do we make them? What do we commemorate through them? How might they be controversial? Have students select a local or national monument to research. Or perhaps they can create a monument to commemorate a character or social issue in a book they are reading or some person or event in their school or town. What materials would they use? What shape would it be? Where would they place it? They could then develop a pitch to give to their class who might vote with "monument money" to see which proposal would "win." Check out the following related resources:
  - Crayola  
[\(https://www.crayola.com/lesson-plans/maya-lin-architect--sculptor-lesson-plan/\)](https://www.crayola.com/lesson-plans/maya-lin-architect--sculptor-lesson-plan/)
  - Facing History and Ourselves  
<https://www.facinghistory.org/resource-library/regret-inform-legacies-memories-vietnam-war>
  - Kimball Arts Center  
[https://kimballartcenter.org/wp-content/uploads/2018/09/EVA\\_2018-20192MayaLin.pdf](https://kimballartcenter.org/wp-content/uploads/2018/09/EVA_2018-20192MayaLin.pdf)
- Use ***Grand Canyon*** to launch a study of national parks. Have students learn the history of how the parks came to be with *The Camping Trip that Changed America*. Research parks online (<https://www.nationalparks.org/>) and find parks in your state or parks they'd like to visit (<https://www.nps.gov/index.htm>). Find out about the challenges of preserving national parks (<https://www.nationalgeographic.org/activity/people-and-parks-challenges-and-solutions/>) and have students take action on daily habits that might help curb their impact on their

natural surroundings.