



GEORGE WASHINGTON'S **Life in Color**



s p r i n g

Life Guard Teacher Fellowship Created Materials
George Washington Teacher Institute

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Connecting Across the Curriculum: More Ideas for George Washington's Life in Color

Spring

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1

Anatomy connection: Experiment with complementary colors. Stare at a yellow circle for 30 seconds and then look at a white space (paper, a wall, etc.). You will see a circle...but it will be a purple circle! The photoreceptors in your eye are experiencing “cone fatigue.” Try this with the purple and yellow ellipse shape at the top of this page. The purple and yellow will change places when you look at white space. Try the experiment with other complementary pairs.

2



I Spy Something Purple...and Something Yellow

Complementary colors are directly across from each other on the color wheel: red and green, blue and orange. Complementary colors are as opposite as colors can be. Sports teams will choose complementary colors as team colors because the distinct differences provide a high-energy visual combination. Picture the vivid contrast of a red cardinal against green leaves or orange leaves against a blue sky. Purple and yellow are a third complementary pair. Nature combines purple and yellow in flowers like irises, pansies, and crocuses.

Yellow is one of the three primary colors. Primary colors are foundation colors and as such cannot be mixed from other colors; however, when primary colors are mixed together they create a range of new colors. One of the earliest pigments used was yellow ochre, a golden brown that is the natural color of some clay. Yellow ochre was used in cave paintings more than 15,000 years ago. Later yellows included Naples yellow

and Cadmium yellow (both toxic), and Gamboge, developed from an orange-brown tree resin that is yellow when powdered. Gamboge can be used as a textile dye as can saffron and turmeric, two spices that might be more familiar in the kitchen than in the paintbox.

Purple is a secondary color. Purple is made by mixing two primary colors: blue and red. It has been associated with nobility and royalty for thousands of years. In ancient Rome, the standard white toga was embellished with a band of purple cloth for use by Romans of a particular status. Romans of an even higher status were allowed to wear an entirely purple toga. Part of the reason for purple's association with the upper strata of society is the expensive nature of the dye's sources. Shades of purple have been derived from several natural sources including the murex, a type of sea snail. The murex is found in different locations, and the color that comes from the animal varies by geography. Sometimes the dye turns out bluish-purple; other times it is a redder color. Thousands of the sea snails were required to make a single dye lot. As a result, in ancient times, a pound of purple-dyed wool was equal in value to a pound of gold.

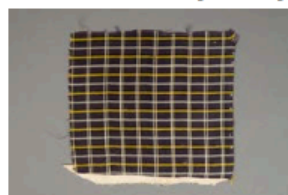
The examples here are purposeful pairings of purple and yellow. The first example, Martha Washington's shoes, shows the pairing in special occasion clothing. The second is also a clothing illustration, perhaps everyday clothing. The third illustration pairs the two colors in an award, given to honor someone. These three purposeful uses of purple and yellow together give an idea of the popularity of the color combination in George Washington's world.

On January 6, 1759, when the young widow Martha Custis married the planter George Washington, she had said “yes” to a yellow silk lampas dress. There was lace at the sleeves and

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neck. On her feet she wore purple shoes decorated with silver lace, sequins and braid. The upper of the shoes was covered in a purple satin-weave silk with a navy silk top-binding. The wooden heel was covered in the same purple silk as the upper, and a buckle fastened through aligning holes in the tongue and straps. Though purple and yellow is not a combination we see often at weddings today, the rich color of the gown and shoes combined with the silver decorations would have given the bride an appearance that reflected her social and economic standing. The shoes are shown (opposite) as they might have originally looked. The shoes' original purple color has faded in the centuries since the Washingtons' wedding.



In the Mount Vernon collection are several fragments of cloth from a waistcoat worn by George Washington. The waistcoat was later cut into pieces so that his descendants and admirers could have a small piece. The fabric is faded now, but the reverse of the fabric shows the original colors: lavender with yellow and white stripes. The narrow stripes run on both the warp and weft, creating a plaid pattern. Two fragments have seams evident. The types of seam suggest that one fragment was from the center opening of the waistcoat and the other was from the bottom edge of the waistcoat. The design of the fabric dates it mostly likely from the 1780s to the 1790s.

A third instance of a purple and yellow color

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scheme associated with George Washington is found in the military decoration known as the Purple Heart. Given to soldiers who are injured or killed while serving in the U.S. military, the Purple Heart Medal was first given in 1917, but its forerunner (example below) set the design.



In 1782, Washington established the Badge of Military Merit: “...The General ever desirous to cherish virtuous ambition in his soldiers, as well as to foster and encourage every species of Military merit directs whenever any singularly meritorious action is performed, the author of it shall be permitted to wear on his facings, over his left breast, the figure of a heart in purple cloth or silk edged with narrow lace or binding.” Originally only enlisted men were eligible for the award. Washington intended the award to be given regularly, but after the Revolutionary War, it was almost forgotten. The award we know as the Purple Heart, proposed by General John J. “Blackjack” Pershing, remembers and recognizes Washington's ideals by including a profile portrait of the first Commander in Chief in gold with a gold border around the purple enameled heart.



2

Culinary connection: Turmeric and saffron are both spices and dye pigments. Learn about these substances as food. How do they taste? Where are they found? What dishes are they in?

3

Biography connection: Do you know anyone who has received the Purple Heart? How can you honor their lives?

1

Environmental connection: Research what a weathervane does and how it works. Are there other names for a weathervane?

4



Direct, Not Deceive: A Golden Crown

What is the highest point at Mount Vernon? With the exception, perhaps, of some trees, it is the weathervane atop the mansion's cupola. In 1787, George Washington wrote to master carpenter Joseph Rakestraw of Philadelphia asking him to "hasten" the work he was doing for Washington. There had been an advertisement for a ship sailing to Alexandria (VA) from Philadelphia, and Washington was hopeful that Rakestraw would be able to complete his commission in time to make the vessel's sailing date. Washington was eager to have the piece on the ship so that it might be installed as soon as possible at Mount Vernon. The commissioned piece was the weathervane that now sits atop the cupola.

Washington requested the topper be in the form of a bird with fully spread wings and an olive branch in its mouth. The bird "need not be large" according to Washington's letter of 20 July 1787, and he requested to be contacted if Rakestraw encountered any difficulties with the design or if it was going to cost more than expected.

On 12 August, just weeks after his letter to Rakestraw, Washington wrote his nephew, George Augustine Washington, at Mount Vernon. After acknowledging a letter received on 5 August and commiserating on the weather (there was a drought), the uncle informed the nephew that the ship *Dolphin*, under the direction of Captain Steward, was bringing goods designated for Mount Vernon. Among them, Washington wrote, was "a top for the Cupulo of the House, which has been left so long unfinished. I do not suppose there would have been any difficulty in fixing it without directions; but I requested the maker to give them; and they are sent accordingly. The sooner it is put up the better; but before it is done, the wood part (of what is sent) must receive a Coat of white paint. The spire (if it is not the case already) must have that of black; the bill of the bird is to be black, and the Olive branch in the mouth of it, must be green; these two last are otherwise by mistake—Great pains (and Mr Lear understands the Compass) must be taken to fix the points truly; otherwise they will deceive rather than direct—(if they vary from the North, South, East, and West)—one way of doing this may be by my Compass being placed in a direct North line on the ground at some distance from the House by means of which and a plumb line, the point may be exactly placed—that is by having the point in a true line between the plumb line and the Spire—So with respect to the other 3 points. What the paper means by cutting of the top of the present Cupulo, is no more than the small octagon at the



very top, so as that the work of the old & New may fit well together; and this, if the sizes of the two do not exactly accord, must be so ordered as to do it. Let particular care be used to putty, or put copper on all the joints to prevent the leaking, & rotting of the wood as it will be difficult, & expensive to repair it hereafter."

Washington's specific painting directions—white paint on the wood, black on the spire, black on the bird's bill and green on the olive branch—impress us with his vision of the project. His specification the olive branch in the mouth of a bird is surely a symbol of peace. Though his letters never specifically state the symbolic nature of the weathervane, it is not hard to imagine that this General who had been away from home for so long fighting a war would want a symbol of peace to reign over his home.

The symbolic nature of the weathervane may encompass more than just the dove ornament. Washington's letter to Rakestraw was written in July, a little less than two months after the opening of the Constitutional Convention. The Convention met in Philadelphia from May through September of 1787. Washington did not want to attend the convention. He (rightly, as it turned out) feared he would again be called into leadership of the new nation when his true desire was to be at Mount Vernon. Eventually he was persuaded to attend and was subsequently elected President of the Convention. Trying to maintain a non-partisan presence, he oversaw the discussion among state delegates that led to the U.S. Constitution.

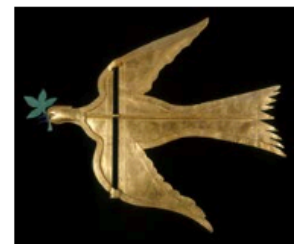
The Convention met during the heat of summer in a room with no open doors or windows (for the sake of secrecy) as they worked to frame a form of government that would succeed where the Articles of Confederation—the original governing document of the United States—had

failed. Perhaps Washington chose the dove of peace specifically for a weathervane as a talisman against the rough winds that he knew the young United States of America still faced.

Washington wrote again to his nephew 26 August 1787: "If the top for the Cupulo, & the directions which accompanied it, are well understood, I would (supposing every thing is on the spot necessary for it) have it put up immediately, whilst the weather is mild, still, and warm."

The dove is made of copper (the body of the bird is copper bound with iron strips), iron (the bill and olive branch) and lead (the bird's head). The body is painted gold, and the remaining elements are painted according to Washington's direction in his letter. The dove flies over an iron directional and a gilded copper ball.

Following George Washington's return to private life following the war, he described his life as being under the shadow of his own vine and his own fig tree. He was also living under the shadow of a dove. A symbol of peace that is not just decorative but is also functional, serving to direct rather than deceive, is surely appropriate as the crowning element—the highest point—for George Washington's home.



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2

Engineering connection: How did George Washington's career as a surveyor help him in setting up the weathervane on the cupola? Washington also placed a sundial in front of the mansion. How is a sundial placed correctly? Did Washington's surveying help him install that installation?

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History connection: What rough winds did the infant United States encounter after the Revolutionary War was won?

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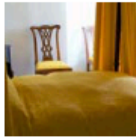
Medical connection: Honey has long been used for medicinal purposes. Research how honey was used in ancient Egypt. Is honey used medicinally today?

6

spectrum



7



After George Washington's death, Martha Washington moved into a garret room on the third floor of the mansion. The room was furnished with yellow silk and worsted damask hangings.



Beautyberry (*Callicarpa Americana*), with its bright purple non-edible berries, is native to the eastern United States. Samples of the plant were sent to England in the eighteenth century.



Every morning, George Washington enjoyed hoecakes with honey for breakfast. He was known to purchase honey from Mount Vernon's enslaved people, who kept honeybees.

1

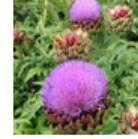


In this image of George Washington as Father and Protector of America, he stands before a purple curtain. Purple has long been associated with royalty and nobility because of the expensive dye sources required to make purple cloth.

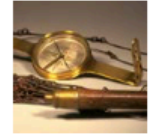
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Yellow corn was ground at Washington's gristmill to provide food for the enslaved population and the livestock. Cornmeal became an important part of the distillery's production as well. In addition to yellow corn, Washington grew white corn from which the gristmill made grits.



Vegetable gardens have been maintained at Mount Vernon since 1760. Hired and enslaved gardeners cultivated vegetables including artichokes, shown here. Artichokes produce a beautiful purple thistle-like flower in mid-summer.



George Washington's first job was as a surveyor. He traveled throughout Virginia's frontier as a professional surveyor and, though his professional career was short, he continued surveying his own land—and land he was considering purchasing—for more than half a century. His last surveying exercise happened five weeks before his death.

2

History connection: Purple is associated with royalty and nobility. It is associated with George Washington probably because there were a number of people who wanted Washington to be king. Find out why George Washington refused to be king. Find out why he refused a third term as President of the United States.

1

Math connection: How many stitches did Martha Washington take for the cushion tops? The tops are—at the widest—19 inches x 16.5 inches on canvas with 9 to 10 stitches per inch. She made twelve cushions.

8

*Vocabulary

Talismans are objects that are thought to have properties of good luck. Most objects considered to be talismans (rabbit's feet, horseshoes, etc.) are so-considered because of folk tradition.

Warp and weft are the two directions that threads run in weaving. Warp threads are the lengthwise ones, held in tension on the loom. Weft (sometimes called woof) threads are drawn over-and-under from one side to the other across the warp threads.

Windsor chairs are wooden chairs that have a semi-circular back supported by upright dowels or rods. Windsor chairs originated in England but were very common in the eighteenth century in America.

Worsted refers to a weight of yarn, a high-quality yarn and the fabric that is woven from the yarn. Worsted is a medium-weight yarn that has been both carded and combed to remove impurities and to lay the fibers parallel to each other. Worsted yarns are stronger than other yarns because they have more twist applied to them in the spinning process.

About the Coloring Page

On the back page of this resource is a page for you to color online. In the picture, a worker spins wool into thread which will then be woven into cloth and made into clothes. The clothing for the enslaved people at Mount Vernon was made on the estate. Mount Vernon sheep were sheared and workers—both hired and enslaved—spun the wool and wove the cloth. Find out more about what happened to those fibers in an essay in the Summer edition of "George Washington's Life in Color."

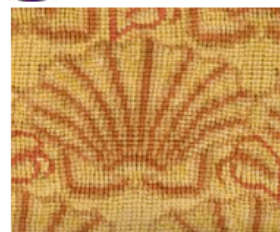


Stitch Upon Stitch: The Needlework of Martha Washington

Would you spend more than 35 years on one project? Actually, it was twelve projects, but since the design, colors, and patterns were the same it might as well be one project. Thirty-five years, Martha Washington did just that. She spent decades on this project and then used her project in her home and ultimately the homes of her descendants and admirers.

In 1766 Martha Washington began cross-stitching a set of a dozen chair cushions for Mount Vernon. The design, which Martha Washington may have created herself, features a series of shells arranged in rows over the surface of a cushion that is itself vaguely shell-shaped. The shells are defined by red-orange stitches with a shadow line that is a slightly darker yellow. The yellow background fills in between the shells and also makes up the highlight areas of the shells. A leaf pattern is put between the shells.

The materials needed for the dozen shell cushions were delivered to Virginia via the ship *Ranger* in March 1766. The order, from upholsterer Philip Bell's London shop, included "To 11 lb. fine



yellow worsted of diff't Shades to Work cross Stitch, To 12 Oz. floss silk, To 12 yds yellow Canvas, To a Strong Case." The support for the work is 9 to 10-count linen canvas, meaning that there are 9 – 10 holes per inch.

Judging by the cushion's appearance now, there were three colors of yarn: yellow that covers most of the background, a red-orange for the outline, and a slightly darker yellow for the shadow. Those colors describe the appearance of the cushion now, though it is not necessarily how the cushion looked when it was being created in Martha Washington's hands.

The chair cushions were made to be used in the mansion, so they were exposed to light and other environmental elements that might cause the yarns to fade. While there are scientific ways to discover how many different yarns Martha Washington might have been using, the habit of using the Washington family's existing goods to make mementoes of the family has preserved some of the original needlework with less fading.

Martha Washington's granddaughter Eliza Parke Custis Law cut up some of her grandmother's cushions and crafted needlecases from them. The cushions were used for the case cover, and the lining was cut from one of Mrs.

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Washington's silk dresses. Needlecases were usually kept in sewing cabinets or baskets and brought out only when in use. Chair cushions would have been placed on the chairs and left in place all the time.

The photos above show the difference between the cushion (this page top, left) and the needlecase (above, right). What looks like three colors in the cushion becomes at least six colors in the needlecase. The needle case suggests that the Little Parlor, where the cushions may have been played with Windsor* chairs, was filled with rich, saturated color.

Of the original dozen cushions stitched by Martha Washington, six are in the collection at Mount Vernon.



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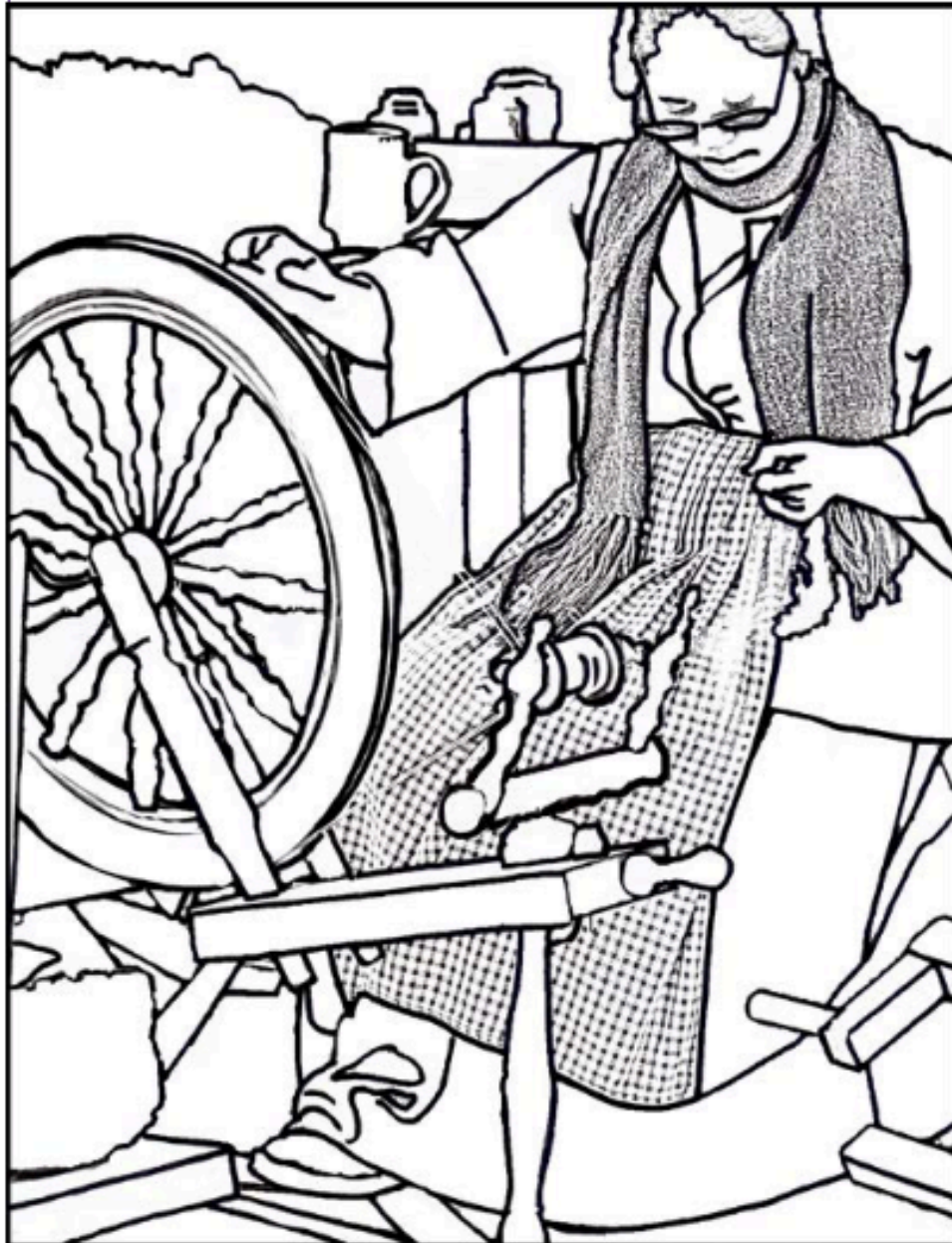
Design connection: Based on the photos of the cushion and needlecase, use graph paper to reproduce Martha Washington's shell design. Each square of the graph paper corresponds to one stitch. Select different symbols or colors for each yarn color.

3

Science connection: Art conservators use false-color imaging to see beyond the visible spectrum. A false-color image reads electromagnetic waves to discover differences among colors that may look similar to the naked eye. This process can be helpful when colors have faded and all look the same. What else can you learn about false-color imaging?



Add your own color to George Washington's world.



Engineering connection: The spinning wheel on the coloring page performs several different functions. It aligns the fibers, twists them, and wraps them on the spool. Study the machine in action, then diagram the action and the motion of the machine.