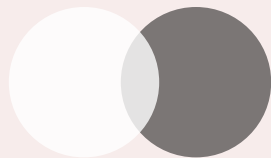


Colors are Beautiful!

HW 8 Write-up - An educational tool for novice art learners

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Part 1

-Purpose of my website

This website is a place for novice art learners to learn color wheel and to test resultant colors when blending two colors. The reason why I'm particularly interested in this topic is that color is one of the key ways to describe and categorize our visual world. Better understanding colors provides learners a more precise way to understand the world and describe it. The gist of this site is that starting with just three primary colors, we can get all the colors of the rainbow.

-Information I convey with my website

The website has two parts, the first is the most fundamental and important color theory, the Color Wheel, found under the "Learn the Color Wheel" tab. The other is a supporting tool for them to test resultant colors when mixing colors found under the "Try the Blending Tool".

Color wheels show us how colors are related and what are primary, secondary and tertiary colors. There are three sub pages under the Learn the Color Wheel section, which are primary colors, secondary colors and tertiary colors.

The Blending tool is where users can actually test resultant colors when mixing any two of the colors from primary, secondary, and tertiary colors.

-How is it interesting and engaging

In term of the design of the site, the two main parts are a combination of receptive learning and active learning. By looking at the colored canvas with color names and description overlaid, the learners could remember better the colors receptively. The color tool, on the other hand, gives learners opportunities to blend by themselves in a more exploratory way.

-The target audience

Novice art learners

Part 2 - Interactions:

In this part, I'll list interactions that happen on all pages first, followed by interactions specific to individual pages.

-Interactions that happen on all pages:

Interaction 1:

- Colorful splash effect
- By clicking on the canvas

Interaction 2:

- Return to HOME page
- By clicking "HOME" or the site logo in the upper left corner

Interaction 3:

- Access "ABOUT THIS SITE" page
- By clicking "ABOUT THIS SITE" in the navigation bar in the upper right corner

Interaction 4:

- Access "COLOR WHEEL" page
- By clicking "COLOR WHEEL" in the navigation bar in the upper right corner

Interaction 5:

- Access "BLENDING TOOL" page
- By clicking "BLENDING TOOL" in the navigation bar in the upper right corner

Interactions specific to individual pages:**HOME page****Interaction 1:**

- Go to the page of learn the color wheel
- By clicking the button "Learn the Color Wheel"

Interaction 2:

- Go to the page of blending tool
- By clicking the button "Try the Blending Tool"

"ABOUT THIS SITE" Page**Interaction 1:**

- Return to HOME page
- By clicking the button "Back to Homepage"

Interaction 2:

- Access page of "COLOR WHEEL"

- By clicking "COLOR WHEEL" in the navigation bar in the upper right corner or the main button "Learn the Color Wheel!"

Interaction 3:

- Access page of "BLENDING TOOL"
- By clicking "BLENDING TOOL" in the navigation bar in the upper right corner or the main button "Try the Blending Tool!"

"Learn the Color Wheel" Page

Interaction 1:

- Go to check out what primary colors look like and meanings associated with theme
- By click the button "Check out Primary Colors"

Interaction 2:

- Go to check out what secondary colors look like and meanings associated with them
- By click the button "Check out Secondary Colors"

Interaction 3:

- Go to check out what tertiary colors look like and meanings associated with them
- By click the button "Check out Tertiary Colors"

"Primary Colors" Page

Interaction 1:

- Check out what yellow, red and blue look like and associated meanings

- By clicking anywhere on the canvas, colorful splash happens at the same time

Interaction 1:

- Return to Color Wheel page
- By clicking the button "Back to Homepage"

"Secondary Colors" Page

Interaction 1:

- Check out what orange, violet and green look like and associated meanings
- By clicking anywhere on the canvas, colorful splash happens at the same time

Interaction 2:

- Return to Color Wheel page
- By clicking the button "Back to Homepage"

"Tertiary Colors" Page

Interaction 1:

- Check out what yellow-orange, orange-red, red-violet, violet-blue, blue-green and green-yellow look like and associated meanings.
- By clicking anywhere on the canvas, colorful splash happens at the same time.

Interaction 2:

- Return to Color Wheel page

-By clicking the button "Back to Homepage"

"Color Blending" Page

Interaction 1:

-Select one color for blending on the left side from the list of primary colors, secondary colors and tertiary colors, and see the background changed to the selected color.

-By clicking one button from the buttons on the left side.

Interaction 2:

-Select another color for blending on the right side from the list of primary colors, secondary colors and tertiary colors, and see the background changed to the selected color.

-By clicking one button from the buttons on the right side.

Interaction 3:

-After two colors have been selected, blend to check the resultant color.

-By clicking the 'Mix!' button in the middle and see the result the circle area.

Interaction 4:

-Change to other colors on either left side or right side to see blending results.

-By clicking the buttons on either the left side or right side to update color for blending.

Part 3 - External Tools

-01

Name of Tool: Anime
<http://animejs.com/>

Why: Anime particularly have two JavaScript libraries that really helpful on representing my site design listed below.

How: The first one is seamless infinite looping animation which perfectly represents color wheel. The second one is fireworks canvas demo, which is really helpful on representing the colorful splash. See below for more details.

What it adds to my website: visual representation of color wheel as well as interaction effects when clicking on the canvas.

-01

Name of Tool: Anime.js seamless infinite looping animation
<https://codepen.io/juliangarnier/pen/rGjMyW>

Why: The seamless infinite looping animation represents the color wheel, ranging from red to purple - a full spectrum.

How: I used it in both the home page and the color wheel page as an explanation for showing the relationship between primary colors, secondary colors and tertiary colors.

What it adds to my website: visual representation of color wheel in a vivid way.

-03

Name of Tool: Anime.js fireworks canvas demo
<https://codepen.io/juliangarnier/pen/gmOwJX>

Why: This JavaScript provide me the possibility to show the colorful splash effect, and to show the color as a whole background when clicking on the screen with name of color overlaid. This help learners to better understand what are the colors look like.

How: I added more JavaScript codes to have the colors of the canvas matched to color names simultaneously for learners to better understand primary, secondary, and tertiary colors. I updated the hex values on each of the primary, secondary and tertiary pages to visually represent the colors, and also added functions to show different color names and text descriptions when user click the canvas to alter among colors.

What it adds to my website: visual representation of color as background with text overlaid when clicking the canvas.

-04

Name of Tool: Fade Animsition

<http://git.blivesta.com/animsition/fade/>

Why: This JavaScript library helps me on making the fading process of elements more natural, and it's also very easier to change which direction the elements are fading in.

How: I added the fading animation on all the color names, meanings of associated emotion, blending instruction for the seek of showing sequence of information. For example, in the 'check out primary colors' page, the instruction in bigger and bolder font faded in first and the introduction in small font faded in after.

What it adds to my website: animations for texts for better sequencing for showing information.

-05

Name of Tool: jQuery

<https://jquery.com/download/>

Why:

Some Bootstrap functions are built on jQuery; Easier to select and manipulate objects in JavaScript.

How: I used jQuery selectors a lot to apply functions and changing styles by id, class, tag. For example, in the blending colors page, I used

jQuery to select one of the color buttons listed on the left side and one on the right side, and then use jQuery selector to change the color in the circle.

What it adds to my website: supporting other libraries, and selectors in JavaScript.

-06

Name of Tool: Bootstrap

<https://getbootstrap.com/docs/3.3/javascript/>

Why: for responsive design and styling consistency.

How: I utilized bootstrap for multiple reasons: the grid system for responsive design in the header section, the blending color page layout; easily setting styles such as font sizes and button colors. For example, in the navigation bar, the div for the logo and HOME button together take up 3 col, and the links to 'ABOUT THIS SITE', 'COLOR WHEEL', 'BLENDING TOOL' together take up 9 col.

What it adds to my website: responsive framework as well as consistency of font sizes, font types, button styles, etc across different pages.

-07

Name of Tool: Hamburgers

<https://jonsuh.com/hamburgers>

Why: I used this library for the responsive design for the navigation bar.

How: When the screen width is less than 767.95 px, the navigation items - "ABOUT THE SITE", "COLOR WHEEL", "BLENDING TOOL", collapsed into a hamburger icon. When user click the hamburger button, the items show up as a drop-down menu and the icon changed to a "X" button, which is used to close out the drop-down menu. When the screen is wider than 767.95 px, the hamburger button expand to the full navigation bar.

What it adds to my website: responsive design of the navigation bar.

Part 4 - Iterations

In the proposal I submitted for HW7, the two parts of the websites do not have tight connection with each other. In the iteration process, I made the two sections more cohesive and the gist clearer by using what users learned in the color wheel section, to create more colors in the blending tool section. Another iteration is that I abandoned the original thoughts on how to input color for blending, which was p5. The reasons were there were so much fun libraries and effective ways for color mixing and representing.

Part 5 - Challenges

One challenge I experienced was how to use programming to simulate the natural process of blending color - I did some research on color blending and it seems that mixing color is still a open area and there's no ideal solution for now. The way I used in my implementation is to give a 0.5 opacity to each of the colors for blending to mimic real world blending. Another challenge I experienced was about canvas, including layout of canvases - how to make the two canvases side by side on the blending page, as well as rendering the specific canvas according to which canvas the clicked button is on.