

Introduction to Design and Photoshop

Radhika Bhatt

4/19/2016



About the Instructor

- Front End Engineer, Commerce Data Service
- Skills include graphic design, user experience design, branding, prototyping and wireframing, front end development, responsive design
- Education: James Madison University, General Assembly



rbhatt@doc.gov



[@superbhatt](https://twitter.com/superbhatt)



About Commerce Data Academy

- A data education initiative of the Commerce Data Service (CDS)
- Launched by CDS to offer data science, data engineering, and web development training to employees of the US Department of Commerce
- Course schedule and materials (e.g. slides, code, papers) produced for the Commerce Data Academy on Github
- Questions? Feel free to write us at Data Academy (dataacademy@doc.gov)



Goals

Together, we will discuss:

- the importance of design
- good and bad design
- basic design concepts such as visual hierarchy, typography, contrast, alignment, proximity, and repetition
- mobile, web, and user experience design
- the design process



Goals

By the end of class, you will learn how to:

- make better design decisions
- design for the user
- edit images
- optimize images for web viewing / save for web
- create an infographic!

... all within Photoshop!



Class Guidelines

- Feel free to ask questions whenever you come up with them
- Slides and class materials are posted on [Github](#) and can be accessed at any time



Prerequisites

- Download the 30-day free trial of Photoshop onto your computer
- goo.gl/JsJhwY
- Download files from [Github](#) onto your desktop

If you haven't done this yet, do it now. Any questions?



**What are you
interested in?**



**Why is
design
important?**





Source: <http://www.kkstudio.gr/#the-uncomfortable>



“Good design is actually a lot harder to notice than poor design, in part because good designs fit our needs so well that the design is invisible.”

– Donald A. Norman, *The Design of Everyday Things*



Basic Principles of Design

Contrast

- Allows you to emphasize or highlight key elements

Repetition

- Ties together individual elements

Alignment

- Allows you to create order and organization

Proximity

- Creates a relationship between elements



Contrast
Repetition
Alignment
Proximity
+
Color

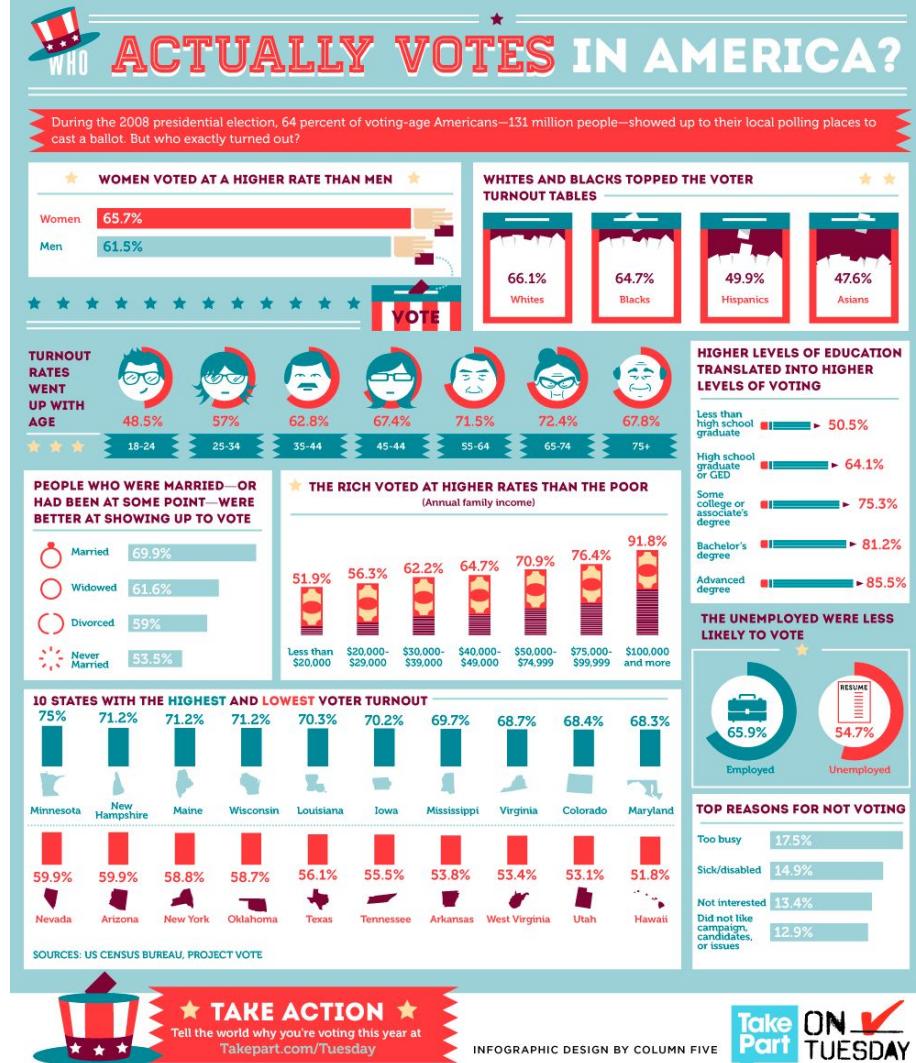


Contrast

Repetition

Alignment

Proximity



Source: <http://ivn.us/2012/07/18/what-would-get-you-to-vote-incentives-for-voting/voting-infographic/>

Typography

Serif

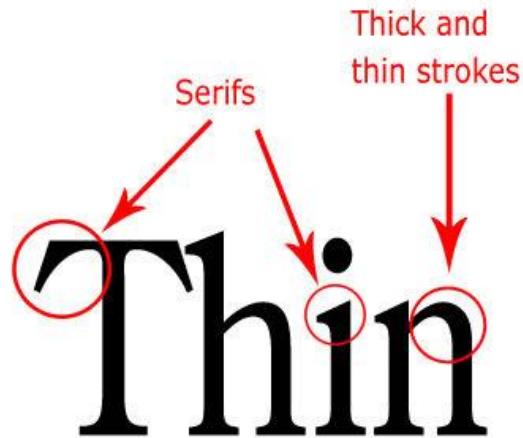
Sans Serif

Script

DECORATIVE



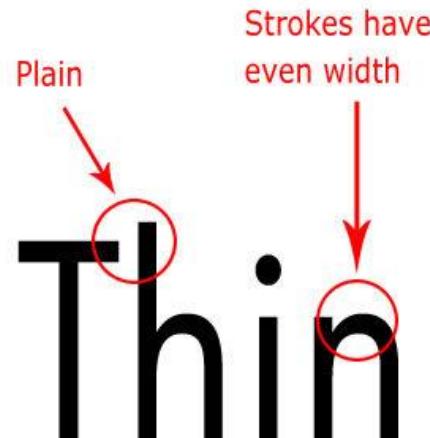
Serif Font



Century Old Style

Times New Roman
Cambria
Georgia

Sans Serif Font



Futura Book

Arial
Trebuchet MS
Verdana



Identify these fonts

1. *Hello world*
2. Hello world
3. Hello world
4. Hello world



Identify these fonts

Answers

1. *Hello world* Script
2. Hello world Serif
3. Hello world Sans Serif
4. Hello world Decorative



On decorative fonts...

Comic Sans

Curlz MT

Papyrus



On decorative fonts...DON'T USE THEM!

Comic Sans

Curlz MT

Parus

<http://www.comicsanscriminal.com/>



Contrast
Repetition
Alignment
Proximity
+
Typography

“Happiness
can be **FOUND**,
even in the
DARKEST of times,
if one only —
REMEMBERS
to turn on the
light”

- Albus Dumbledore



Visual Hierarchy

Strong visual hierarchies guide visual & logical progression by showing what is important.



Weak visual hierarchies provide little or no guidance about what is important.

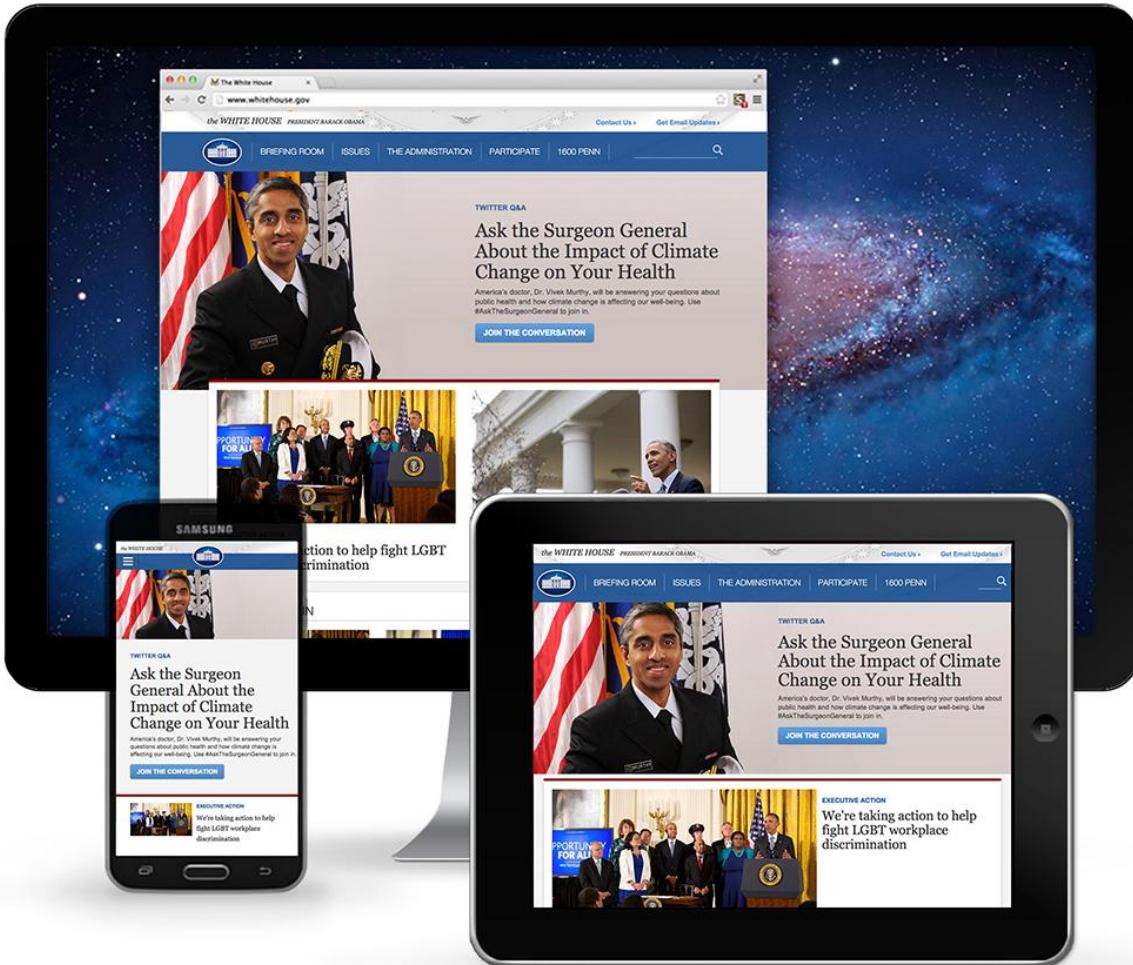
Source: <http://52weeksofux.com/post/443828775/visual-hierarchy>



What is wrong with this example?



Web, Mobile, and Responsive Design



Source: <https://www.whitehouse.gov/blog/2015/04/09/whitehouse-egov-evolving-you-mind>



Accessibility

The inclusive practice of removing barriers that prevent interaction with, or access to websites, by people with disabilities. When sites are correctly designed, developed and edited, all users have equal access to information and functionality.



USER EXPERIENCE DESIGN (UXD)

Is the process of enhancing user satisfaction by improving the usability, accessibility, and pleasure provided in the interaction between the user and a product.



<https://www.youtube.com/watch?v=CJnfAXIBRTE>



How does user experience design work?

- User-centered design **process**
 - takes the user's needs into account during every step of the product lifecycle
- Ask lots of questions
 - who, what, when, where, why, and HOW



“UX addresses how a user feels when using a system. while usability is about the user-friendliness and efficiency of the interface.”

– Jacob Gube, Smashing Magazine



What is wrong with this website?

Skip to main content

Link to this page

Add to Widget

Add to e-mail

Share on Twitter

Your Savings Summary

What's New

Discussion Boards

Amazon Associates

Settings

amazon.com

We have [recommendations](#) for you. (Not Jacob?)

Jacob's Amazon.com | Today's Deals | Gifts & Wish Lists | Gift Cards

Sell on Amazon - 30 days FREE*

Your Account | Help

Shop All Departments

Search Clothing & Accessories

Books

Advanced

All Departments

Automotive

Baby

Beauty

Books

Cell Phones & Service

Clothing & Accessories

Electronics

Downloadable

Grocery & Gourmet Food

Health & Personal Care

Home, Garden & Pets

Industrial & Scientific

Jewelry

Kindle Store

Magazine Subscriptions

Movies & TV

MP3 Downloads

Music

Musical Instruments

Office Products & Supplies

Fiction & Literature

Nonfiction

Arts & Entertainment

Biographies & Memoirs

Business & Investing

Children's Books

Fantasy

Health, Mind & Body

History

Humor

Language Instruction

Mysteries & Thrillers

Politics & Current Events

Religion & Spirituality

Romance

Science

Science Fiction

"I couldn't imagine a better way to spend my commute."

-Julie L.

[Start today at Audible.com](#)

Aud

Books

Download two FREE audiobooks today!

Favorite compatible device and listen anytime.

Download a **two** **FREE AUDIOBOOKS**

Listen to books even when you can't

during the commute, while folding laundry, and as you workout. Begin your 30-day FREE trial with two FREE audiobooks now!



[Start now at Audible.com](#)

Special Offer for Amazon Customers

audible.com An Amazon company

Use your Amazon.com account to start a free trial at [Audible.com](#) and get your first monthly audiobook free, plus a bonus audiobook of your choice.

[Start today at Audible.com](#)

Bestsellers: Audible Audiobook Bestsellers

Dexter Dexter Is Delicious \$94.00 \$18.98

Freedom A Novel \$45.00 \$31.49

The Way of Kings: Book One of The... \$66.00 \$41.99

The Girl with the Dragon Tattoo \$36.00 \$26.25

Great Picks for First-Time Audiobook Listening

The Power of One Bryce Courtenay

A Dirty Job Christopher Moore

Life of Pi Yann Martel

Page 1 of 5

[More Great First Listens](#)

New and Notable Fiction

Page 1 of 5



Improved experience:

The Amazon homepage features a prominent "kindle" section with three devices displayed: Kindle (\$79.99), Kindle Paperwhite (\$119.99), and Kindle Voyage (\$199.99). Above the devices, a banner for the "spring event" is visible, along with account and cart links.

All ▾

Departments ▾ Your Amazon.com Today's Deals Gift Cards Sell Help

Hello, Sign in Your Account ▾ Try Prime ▾ Lists ▾ Cart

spring event

kindle

The best devices for reading, period.

kindle \$79.99

kindle paperwhite \$119.99

kindle voyage \$199.99

Welcome

Sign in for the best experience

Sign in securely

Popular departments

Kindle

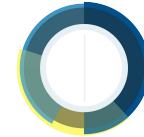
Amazon Video

The dress shop

Deal of the Day

Gillette

SAVE ON GILLETTE'S MOST



BREAK



Commonly Used Adobe Programs for Design



Adobe InDesign



- Text heavy materials
- Resumes
- Interactive PDF's
- Brochures



Adobe Illustrator



- Illustrations
- Custom art
- Converting hand-drawn art to a vector graphic



Adobe Photoshop



- Photo editing
- Photo manipulations
- Graphic creation (posters, web banners, etc)



Photoshop: Let's begin!



What will we be designing? An Infographic!

- Purpose
 - To communicate facts on the Department of Commerce OR the Earth
- Your infographic must contain: (from the class materials)
 - at least 3 facts
 - 1 quote
 - at least 1 image OR at least 3 icons (icon set links included on slide 52)
- Instructions
 - Your task is to use your design knowledge to create a visually interesting infographic
 - You may use facts/quotes on Commerce OR the Earth, but not both of them in the same infographic



What is an infographic?

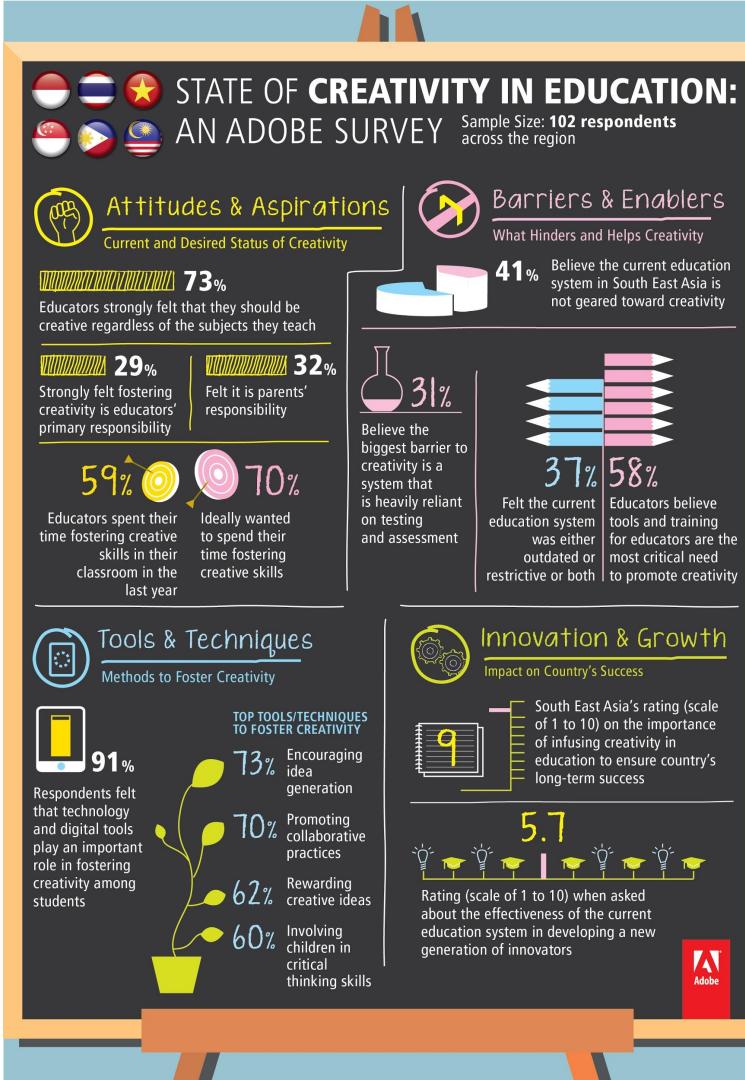
- An infographic is a visual representation of data and/or information
- Infographics help communicate information in a visual manner
 - Example: You could have a fact sheet that contains paragraphs of information, including statistics, facts, and other important numbers, OR you could visualize that information in an infographic, and have readers understand the information with much less text



Infographic Examples

Good use of:

- Color
- Font choices
- Font sizes
- Highlighted numbers



Source: https://bhpenglish.files.wordpress.com/2015/04/state_of_creativity_sea_infographic.jpg

Infographic Examples

Good use of:

- Color
- Font sizes
- Visual hierarchy

Source: <http://2.bp.blogspot.com/-mFJh1NNit38/VTago-J4YMI/AAAAAAAAv8/cj2cHpnRtPk/s1600/community%2Bpower%2Badvantage%2Binfographic.jpg>



Photoshop Terminology

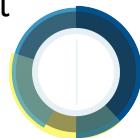
- **Canvas:** the place where you will work in Photoshop
- **Layers:** individual elements of your design (text, image, shape, etc)
- **Free Transform:** enlarging or minimizing an element of your design
 - CTRL + T for Windows
 - Command + T for Mac
- **Color Overlay:** putting a color over your element to change the color
- **Type:** a synonym for text, typography, words, etc.



Making a New Document in Photoshop (illustrated in next slide)

File > New

1. Name your file
2. Choose document type
 - We are going to customize the size of our canvas, so we will select custom. If you are designing something for a regular 8.5x11 piece of paper, that preset is already in there. Also, if you continually need to make something of the same size, you can save your preset in photoshop.
3. For this demo, we will make a 1000x1000 pixel infographic.
 - Change the width and height to 1000, and make sure PIXELS is selected, NOT inches.
4. Resolution: 72 pixels/inch
 - 72 ppi (pixels per inch) is for web, 300 ppi is for print.
5. Color mode: Choose RGB Color
 - RGB is for web, CMYK is for print. 8 bit is the smallest bit size, which will help with keeping the image size small, which is better for web load time.
 - The bigger the file size of your image, the longer it takes to load on a web page. Best practice for web - keep your image size as small as you can.
6. Click OK!



Photoshop CC File Edit Image Layer Type Select Filter 3D View Window Help

Adobe Photoshop CC 2015

Ratio 550 350 Clear Straighten Delete Cropped Pixels Start

Photoshop

New

Name: Earth-Infographic

Document Type: Custom

Size:

Width: 1000 Pixels

Height: 1000 Pixels

Resolution: 72 Pixels/Inch

Color Mode: RGB Color 8 bit

Background Contents: White

Advanced

Color Profile: sRGB IEC61966-2.1

Pixel Aspect Ratio: Square Pixels

OK Cancel Save Preset... Delete Preset...

RECENT FILES

LIBRARIES

PRESETS

New... Open...

Earth_Day_Infographic Earth-Day-Report 5014882302_3 Earth-Day-Info trade-and-invest 5014882302_3 DOC Full color 98CLComm.jpg CDA-Mixit7.png CDA-Mixit6.png CDA-Mixit5.png CDA-Mixit4.png CDA-Mixit3.png CDA-Mixit2.png CDA-Mixit.png CDA-Class-Images.psd Icons.psd Data_Academy_Students_Hard_at_Work.jpg WH-Graphic2.psd CDS-logo-transparent.png

Size Kind

1.7MB Photoshop

8.4MB Photoshop

3.5MB Photoshop

1.2MB Photoshop

37.2KB JPEG

322.4KB JPEG

1.3MB EPS

913.0KB JPEG

34.4KB PNG

33.1KB PNG

42.9KB PNG

39.4KB PNG

41.5KB PNG

22.7KB PNG

45.8KB PNG

352.3KB Photoshop

659.9KB Photoshop

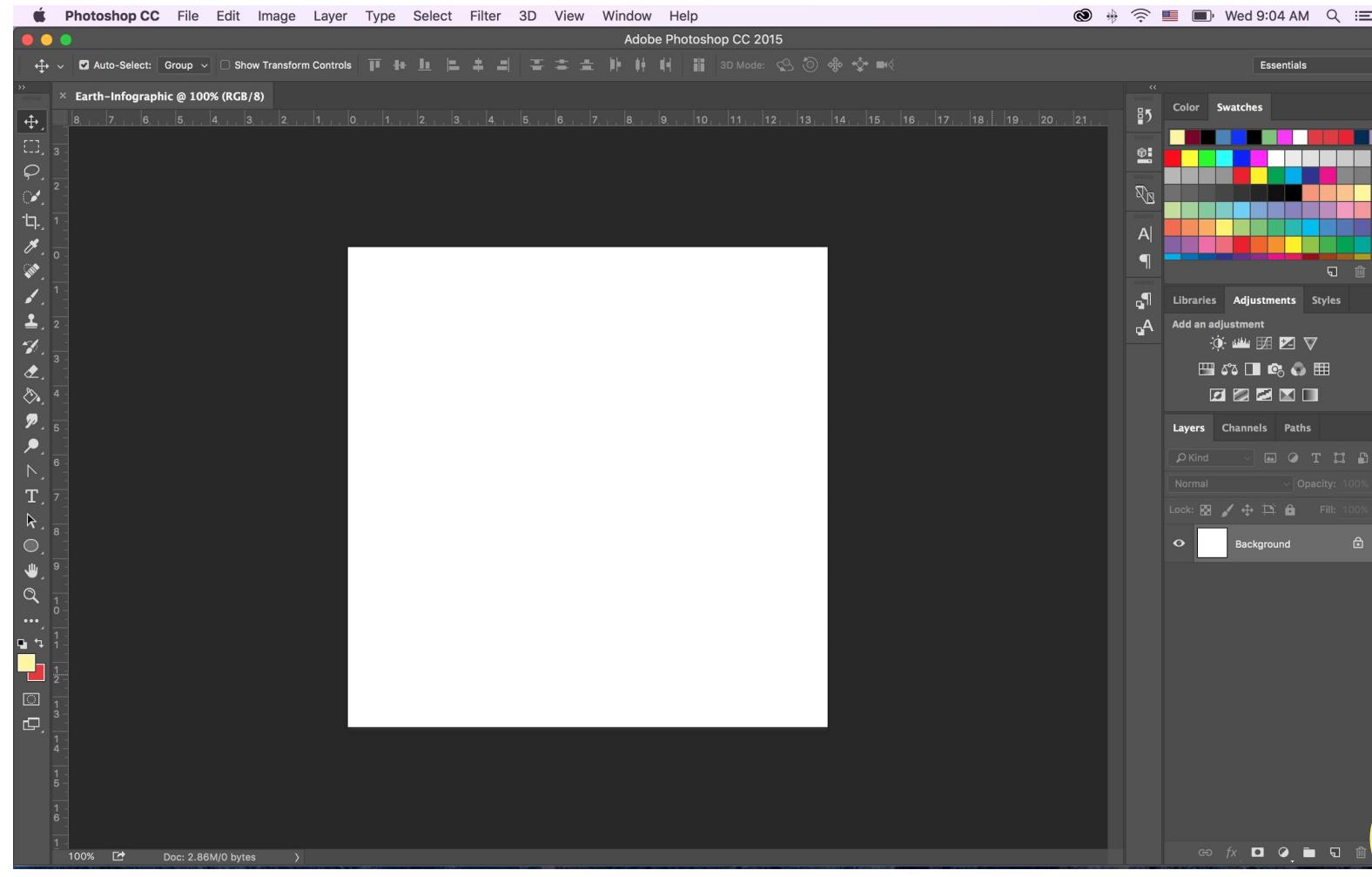
951.6KB JPEG

723.2KB Photoshop

139.7KB PNG

2 days ago 2 days ago 2 days ago 2 days ago Apr 12th, 1:14 pm Apr 11th, 12:02 pm Apr 11th, 11:34 am Apr 11th, 10:42 am

Next, I'll discuss





The Tools





Move tool

- Allows you to move objects around your canvas
- You must select the layer you would like to move





Crop tool

- Allows you to crop your image
- You can choose dimensions by which you would like to crop your canvas
- Note: This crop tool crops the whole canvas, not an individual layer
- Watch out for “delete cropped pixels”, always make sure it is unselected





Type tool

- Allows you to insert text onto your canvas
- Type tool paired with the Character Window allows you to better edit the text on your canvas

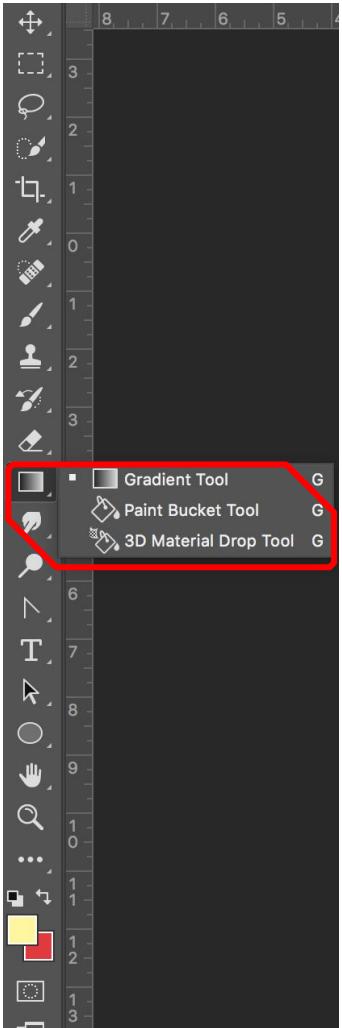




Shape tool

- Allows you to insert shapes
- Rectangle, rounded rectangle, oval, polygon, line, custom shape





NOTE: If you click + hold over any tool in the left toolbar, you have access to more tools below it.

- If you can't find the tool you're looking for, click + hold over different tools to find what you're looking for



Intro Tutorials

This tutorial is an in-depth introduction to Photoshop

<https://www.youtube.com/watch?v=yqKHo1Q7OMc>

This is a quick introduction to working with layers in Photoshop

<https://www.youtube.com/watch?v=ZBKHeU8rWFs>

**After you've watched those tutorials and have a better grasp with
Photoshop, continue to the Design Process!
(next slide)**



Things to Remember

- You must select each LAYER you want to work on
- Free Transform
 - Shortcuts: CTRL + T for Windows, Command + T for Mac
 - Shift + Click + Drag = no image distortion!
 - Only click + drag the CORNERS of your object to have it scale proportionately
 - You must hit ENTER after you Free Transform



Design is a Process!



Research



Brainstorm



Design

Brainstorm ideas and look at other infographics

- Informational
- Educational
- Highlight numbers

Draw some ideas and lay out the information

Translate your design into Photoshop!



Remember...

Your infographic must contain: (from the class materials)

- at least 3 facts
- 1 quote
- at least 1 image OR at least 3 icons (icon set links included on the next slide)



Icon Sets

- <http://www.flaticon.com/>
- <https://icons8.com/web-app/new-icons/all>



Saving Your Work: as Photoshop (PSD) file

File > Save > In location where all your assets are, where you will remember

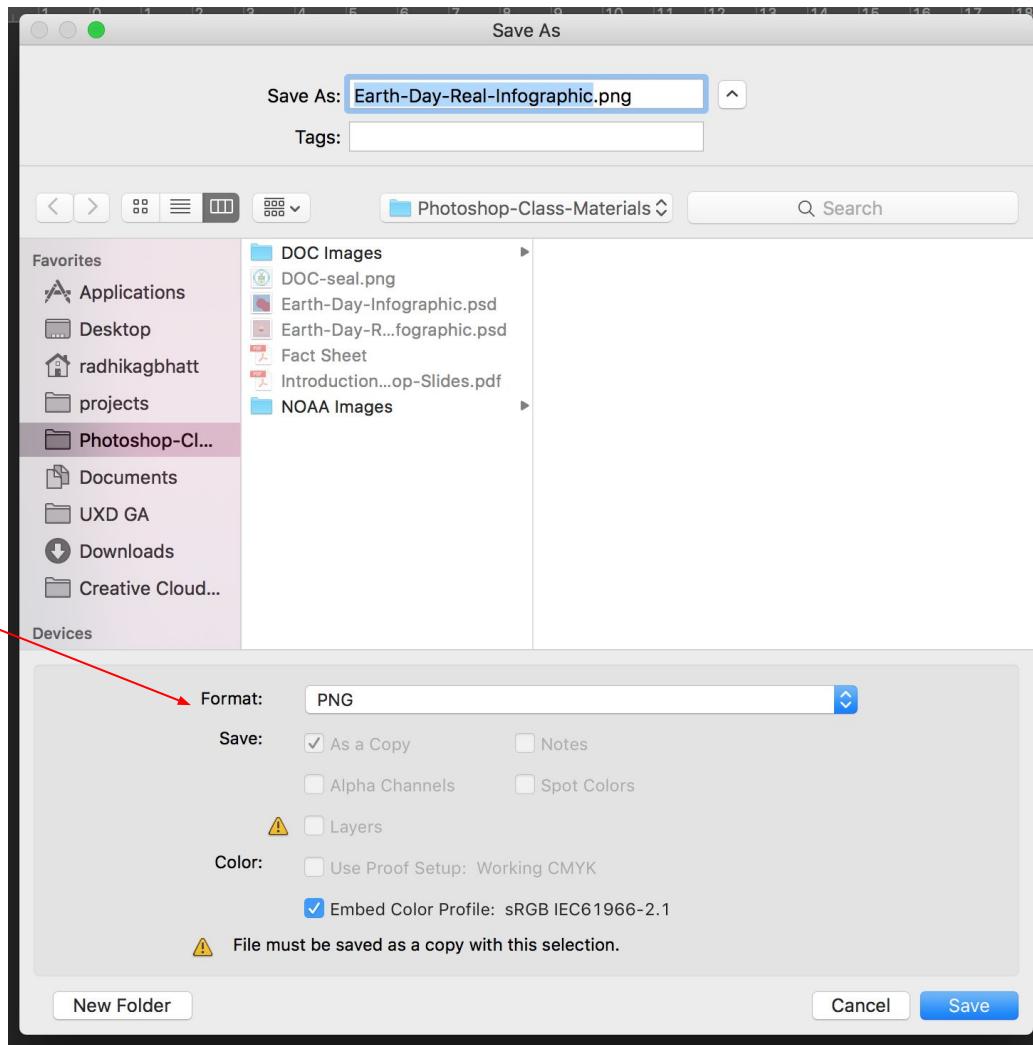


Saving Your Work: as a PNG/JPG

File > Save As

Choose your format

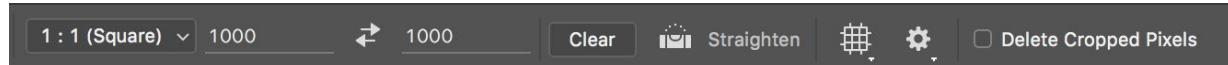
Save



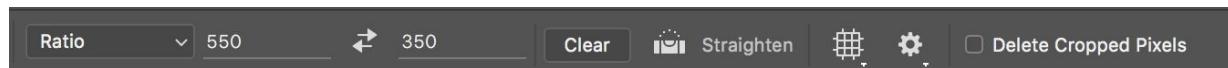
Resizing Images + Saving for Web

Open a single image in Photoshop and crop it.

1. File > Open, select the image you want
2. Click the CROP tool (looks like this )
3. Once selected, at the top of your Photoshop window, you will see this:



You can edit all that information according to how you need to crop your image, and when you do, this bar will look like this: Make sure “Deleted cropped pixels” remains UNCHECKED.



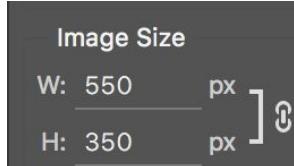
4. Your image will be cropped for those proportions, but may not all fit in that space. You can decide if you want some of the image to be cut off or not, in which case you may not need to transform (resize) the image.

- If you need to resize the image, click Edit > Free Transform (or Command + T for Mac or CTRL + T for Windows) for and remember to press SHIFT as you resize/transform the image.



Resizing Images + Saving for Web (continued)

5. To SAVE the image with those proportions you cropped it to, go to File > EXPORT > Save for Web (legacy) and a dialogue box will pop up, look for this:



- Change the numbers to how you cropped it
- Make sure the numbers are ALWAYS linked, so the image will resize accordingly

Then click SAVE! And you have cropped an image AND saved it for web!

**If you do the other option of Save As > PNG/JPG, your image will NOT be the dimensions you cropped it to be.



Additional Resources

Photoshop Tutorials

- <http://mashable.com/2010/08/12/12-beginner-tutorials-for-getting-started-with-photoshop/#kvTyxVEFUEqj>
- <http://www.creativebloq.com/graphic-design-tips/photoshop-tutorials-1232677>

Design

- https://www.ted.com/talks/don_norman_on_design_and_emotion?language=en
- <https://hackdesign.org/lessons>



Additional Resources

Web Design

- <https://www.smashingmagazine.com/2008/01/10-principles-of-effective-web-design/>
- <http://webfieldmanual.com/>

Mobile Design

- <http://pttrns.com/> → curated list of mobile design patterns
- <https://www.smashingmagazine.com/guidelines-for-mobile-web-development/#a5>



Additional Resources

UX Design

- <https://www.youtube.com/watch?v=Ovj4hFxko7c>
- <https://www.smashingmagazine.com/2010/10/what-is-user-experience-design-overview-tools-and-resources/>
- <http://uxmyths.com/>
- <https://www.nngroup.com/articles/> → excellent resource for UX trends + findings

