



Computer Science 1033 – Week 1

- WHAT IS MULTIMEDIA
- MULTIMEDIA HISTORY
- DESIGN TIPS
- FONT/TEXT TIPS

Fonts

"If the Force of Yoda's is so strong, construct a sentence with words in the proper order then why can't he? → *Unix Fortune*

Overview of Today's Topics

- A bit of a mishmash ☺
- Overview of multimedia in general
- A bit of the history of multimedia
- A little bit about monitors and display
- Design tips
- Usage of text on a website

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Textbook Readings

- Introduction
 - All of it (it's not very long!)
- Graphics
 - What are Graphics?
 - Basics of Graphics
 - Design Principles and Considerations

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Big Ideas for Today

- Big Idea 1: First Impressions Matter!
 - Using senses to communicate
 - How do we spread ideas
 - Why use the Internet?
- Big Idea 2: What makes one design look better than another?
 - CRAP
- Big Idea 3: Monitors and Needlepoint!
- Big Idea 4: Fonts
 - Are you a font SAVANT?

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What is Multimedia? (term coined around 1962)

- Some definitions:
 - **Wikipedia** → "**Multimedia** is *media* and *content* that uses a combination of different *content forms*."
 - **Merriam Webster** → Their definition is **actually** a multimedia definition ☺ <http://www.merriam-webster.com/dictionary/multimedia>
 - **Cambridge Dictionary** → "using a combination of moving and still pictures, sound, music and words, especially in computers or entertainment"

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- All the definitions encompass different ways (more than one) of expressing something.
- How do we express ourselves?

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Exercise

- Find one or two other people in the room and take 2 minutes to introduce yourself
- Find out:
 - Their favourite movie(s)
 - Where they went to high school
 - Farthest country from London, Ontario that one of their grandparents is from
 - What one thing do they hope to learn in this class



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Making an Impression

- How long do you think you have before someone makes a judgement about you?

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Now consider after you first arrive at a website...

- How long does it take you to decide if you want to stay or if you want to leave this site?
- **QUESTION: What makes you want to leave a website rather than investing more time in it?**

◦ <http://vandelaydesign.com/blog/design-process/why-visitors-leave/>



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How can we communicate?

- Via the five senses:
 - Sight
 - Smell
 - Sound
 - Touch
 - Taste
- **QUESTION: Which ones can we utilize for communication on the web?**
- **Multimedia application** → an application that can be used to present text, sound, video, images and animation (technical definition)...
<http://www.simworx.co.uk/dimensions-4d5d-effects-theatres/>

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Multimedia Uses

- To Inform:
 - <http://www.cbc.ca/radio/>
- To Educate:
 - [How to parallel park](#)
- To Sell and Run Businesses:
 - <http://www.chapters.ca>
 - <http://www.monster.ca>
 - <http://www.eharmony.ca>
- To Entertain:



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Why communicate via the web?

- **QUESTION: What are the ways we can communicate or "spread a message" to other people? Can you name some ways? How did/does propaganda work? What did people used to do to spread a message?**



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The World Wide Web is the: **Voice of Power!**

1. Which area do you think has the most people?

1. Africa,
2. Asia
3. Europe,
4. Latin American/Caribbean
5. Middle East,
6. North America
7. Oceania/Australia

2. Which area do you think has the most Internet users?

3. Which area is the smallest, has the least users?

Info from: <http://www.internetworldstats.com/stats.htm>

The Future → Are you ready?

- <https://www.youtube.com/watch?v=Y9FOyoS3Fag>
- **QUESTION: What is the difference between the World Wide Web and the Internet?**

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Great Moments in Multimedia History Before the 1800s



15,000 - 13,000 BC → Prehistoric humans paint images on the walls of their caves Grotte de Lascaux, France

Also...

- **1041 AD** → Bi Sheng invents movable type in China using clay letters.
- **1450** → Johann Gutenberg introduces movable type (with steel letters), to Europe allowing mass production of books.
- **1702** → England's first daily newspaper starts publishing

Great Moments in Multimedia History between 1800 and 1900



1895 → Louis and Auguste Lumiere make *La Sortie ouvrière de lausine Lumiere*, considered the first motion picture

Also...

- **1814** → Joseph Nicéphore Niépce achieves the first photographic image.
- **1837** → Louis Daguerre invents the first practical form of photographic reproduction.
- **1858** → Europe and North America are linked via a transatlantic telegraph cable. By 1866, news that had once taken months to travel, now took seconds
- **1877** → Thomas Edison invents the phonograph
- **1877** → Eadweard Muybridge invents **high speed photography** - creating first moving pictures that captured motion.

Great Moments in Multimedia History between 1900 and 1940



1940 → Dorothy Kunhardt's Pat The Bunny is published. First book to have multimedia and interactivity: We pat the soft fur of the bunny, play peek-a-boo, look in the mirror, and then do it all over again.

Also...

- **1914** → Animation created by tracing live action films (rotoscoping)
- **1926** → First practical television system demonstrated
- **1927** → The Jazz Singer is the first film to feature spoken dialogue in sync with the movie.
- **1928** → Walt Disney debuts Steamboat Willie, first cartoon to use synchronized sound.
- **1939** → The Wizard of Oz memorably shows the difference between the colour and black and white cinematography.

Great Moments in Multimedia History between 1940 and 1993



1991 → Tim Berners Lee invents the World Wide Web.

Also...

- **1962** → Telstar, first communications satellite is launched into orbit.
- **1969** → **ARPANET (eventually the Internet) is established by the U.S. Department of Defence (more on this later)**
- **1971** → First email sent, @ picked as symbol to indicate address
- **1983** → Internet is created when TCP/IP is adopted by all ARPANET users
- **1991** → **Tim Berners Lee has finished developing the World Wide Web (http) and html and URL. World Wide Web makes its debut**
- **1993** → Mosaic, first graphical web browser is released

Great Moments in Multimedia History between 1994 and 2001



Also...


- 1994→The Rolling Stones become first major band to broadcast live over the internet.
- 1996→ Affordable digital cameras become widely available
- 1999 → Napster debuts
- 2001 → Apple introduces iTunes and the iPod
- 2005 → YouTube.com launches
- 2006 → First twitter message sent
- 2007 → Search engine giant Google surpasses Microsoft as "the most valuable global brand," and also is the most visited Web site

1995 → Disney releases Toy Story, first feature length computer generated movie... 77 minutes, 4 years to make, 800,000 machine hours to render.

Information and dates from:
http://www.webopedia.com/quick_ref/online.asp
<http://writing.stonemountain.com/moments.htm>

Good Design Principles

- <https://cheezburger.com/635909/funny-memes-images-that-prove-design-isnt-for-everybody>
- What can we do to make our websites (or any marketing material) look a bit more professional?
- Remember design is all about CRAP!
- Most of this information and some of the examples are taken from an EXCELLENT book called:
 - **The Non-Designer's Design Book by Robin Williams**



Box A	Box B
<h3>Good Design Is As Easy as 1-2-3</h3> <ol style="list-style-type: none"> 1. Learn the principles. They're simpler than you might think. 2. Recognize when you're not using them. Put it into words – name the problem. 3. Apply the principles. You'll be amazed. 	<h3>Good Design is as easy as ...</h3> <ol style="list-style-type: none"> 1 Learn the principles. They're simpler than you might think 2 Recognize when you're not using them. Put it into words – name the problem. 3 Apply the principles. You'll be amazed.
<p>Both boxes above say the same thing.</p> <p>QUESTION: Which design do you like better: A or B?</p> <p>QUESTION: Can you put your finger on what makes one "Better" than the other.</p>	

Element	Overview
<ul style="list-style-type: none"> • Contrast • Repetition • Alignment • Proximity 	<ul style="list-style-type: none"> • Avoid making 2 elements just similar, either make them the same (same font, colour, etc...) or make them VERY different. • Repeat some aspect of the design throughout the entire design i.e. Bold font, thick rule, bullet, colors, font types • Items are aligned - creates stronger cohesive unit • Group related items together

When designing a webpage think about CRAP!

Contrast

Cool Quotes

- See everything, overlook a great deal, improve a little.
- Between two evil, choose neither; between two good, choose both.
- Give with no strings attached, and you will receive in the same manner

COOL QUOTES

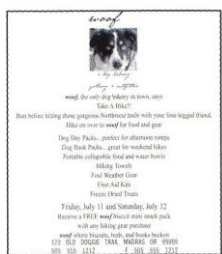

See everything, overlook a great deal, improve a little.

Between two evil, choose neither; between two good, choose both.

Give with no strings attached, and you will receive in the same manner

Contrast: Another Example

- General Rule: **Don't be wimpy, go bold or go home!**

Examples from: "The Non-Designer's Design Book by Robin Williams" Side 24 of 74

- This:

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Repetition

- Repetition of
 - Bullet type
 - Spacing
 - Light text
 - Heavy text
 - Alignment
 - Indentation

Brad Pitt

Movies

- ❖ Thelma and Louise
- ❖ Legends of the Fall
- ❖ Oceans Eleven

Relationships

- ❖ Gwyneth Paltrow
- ❖ Jennifer Aniston
- ❖ Angelina Jolie

Childhood


- ❖ Birthday: December 18, 1963
- ❖ Born: Shawnee, Oklahoma

References available upon request

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Repetition: Another Example

- **QUESTION:** What repeated elements can you find in this webpage?



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Alignment

Fun Things for a Professor to do the First Day of Classes:

Ask students to call you "Tinkerbelle" or "Surfin' Bird".

Growl constantly and address students as "matey".

Show a video on medieval torture implements to your calculus class. Giggle throughout it.

Sneeze on students in the front row and wipe your nose on your tie.

by Alan Meiss

This is okay 😊

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by Alan Meiss

But this looks better! 😊

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Alignment: Another Example

HOW 'BOUT IT, PARDNER?

How'd you like to ...

wake up with the sun, pour yourself a cup of coffee, and give out upon the open road from the steps of your hangout?

Can you imagine ...

spending the day outside, beneath a chaise longue, putting in a hard day's work—working close to the land?

What if you could ...

work on a horseback, with your horse as your closest companion and steady workmate?

Ever wanted to ...

take the best vittles you've ever had at the end of a full day of riding, roping, and bronzing?

Would you like to ...

live the kind of life most people have only seen in the movies?

It's all possible.

Live the life you've dreamed about!

Be a cowboy!

For more info on how to build up and start your own career as a cowboy, contact us right away! phone: 1-800-999-9999 email: howabout@howabout.com

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Proximity

The Menu

Eggs Benedict
Pecan Crusted Trout
Steak and Kidney Pie
Apple Crisp
Cheese Fondue
Macaroni and Cheese
Strawberry Cheesecake
Lemon Mousse
Caesar Salad
Roast Chicken

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- **QUESTION:** What do you think when you look at the second box compared to the first box?
- Remember → Physically grouping things together implies a relationship

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Proximity: Another Example

Free Trial! Free Session!

Learn to Dance! Parties!

Hip Hop Salsa Cloun Funk
Tango Rumba Salsadance Quickstep
Foxtrot 5-3 14 Hop
Bolero 105 Dive Lane
Cha Cha
Roulette Dance Stg
West Coast Swing

Learn to Dance!
Roulette Dance Studio - 105 Dive Lane - Saturdays 9 a.m. to 2 p.m.

Smooth	Rhythm	Street	Social
Waltz	Cha Cha	Hip Hop	Salsa
Tango	Rumba	Keump	Lindy Hop
Foxtrot	Bolero	Cloun	East Coast Swing
Quickstep	Mambo	Funk	West Coast Swing

With or without a partner!
Parties! Free Tea and Sweets!

Examples from: "The Non-Designer's Design Book by Robin Williams" Slide 31 of 74

Poster Finalist From 2007

go2read club

COME CHECK OUT
WHAT EVERYONE'S THINKING ABOUT...

MEMBERSHIP: \$100/Year
Includes: Book Club

CREATE YOUR OWN PASTA BAR
EVERY THURSDAY
FROM 11:30-1:30PM
\$7.50 INCLUDING TAX

INTERNATIONAL BUFFET
EVERY FRIDAY
FROM 11:30-1:30PM
\$7.95 FOR BUFFET TUES
\$11.95 FOR 1 BUFFET THURS

WHERE IS THE GRAD CLUB??
FIND US IN THE GYMNASIUM
OF MIDDLESEX COLLEGE

WHAT IS OUR PHONE NUMBER??
519-465-7311 X 94396

DELICIOUS FOOD & TONS OF VARIETY! COME CHECK IT OUT!

QUESTION: Can you see examples of the four principles that worked well in this poster and what didn't work well?

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Which poster design do you think achieves the most CRAP principles?

A B C D



Before we begin, let's see how a monitor displays things visually!

- A monitor is just a raster of pixels (dots) on a screen.
- On a monitor, each dot is a pixel.
- Video cards send data to the monitor to create an image.
- On a monitor, each dot is a pixel.

More on monitors

- Question: What are the dots/pieces on a monitor/screen called?
- We can use pixels (dots, thread) to represent ANYTHING (images, text, drawing) that we want to display visually on the screen (paper, fabric).

This "E" has a size of 9 (9 pixels)

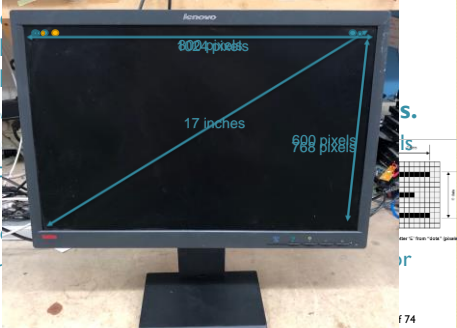
Forming the letter "E" from "dots" (pixels)

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More on monitors

- **QUESTION:** On a 17 inch monitor, we could have 800 pixels across and 600 pixels down.

- What would happen if we had more pixels?
- What would happen if we had fewer pixels?
- If we had more pixels, would the image be clearer?



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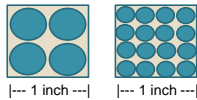
More on monitors (and printers)

- A pixel is displayed using light on a monitor to create images or text.
- When **printing** text or images, we use ink to create the pixel but in printing, the pixels are called **dots**.
- Dots (in printing), are just like pixels in that:
 - They can take on different colours
 - They can be big, creating big images, or small, creating smaller images.

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More on monitors and printers

- **QUESTION:** Which one will have bigger dots → 72dpi or 300dpi (where dpi means dots per inch)? Think about 2 dpi vs. 4 dpi.



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300 PPI

72PPI



72 dpi

300 dpi

QUESTION: Can any one guess the problem with bigger dots/pixels?



The Use of Text on a Website

- What do you need to know? Remember:
 - Text can be used to serve two purposes:
 1. It conveys information
 2. It can be used as a graphical element of the page (i.e. it doesn't have to be ugly or boring! 😊)
- You may have a cool font on your machine, but the person viewing your website might not have that font! [Here are some "Websafe Fonts"](#)
- **QUESTION:** What can you do if you really want to use an unusual font on your website? [Choice 1](#) or [Choice 2](#)

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Now that we have a basic understanding of ANYTHING is drawn on a monitor or on a piece of paper by a printer (just broken down into dots)

LET'S SEE HOW TO REPRESENT TEXT

Text can set a mood

- QUESTION: What type of restaurants are these?

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Make your style of text choices based on:

- Your audience:
 - QUESTION: What do you need to think about for each of the following groups?
 - Children (what age group?)
 - Teens
 - Young Adults
 - Older People
- The type of application:
 - Educational?
 - Entertainment?
 - Business?

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Text can set a mood

United Nations Poster showing the power of text!

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Some Examples From Print

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Some Terminology

- Font Type (or Typeface or sometimes just Font)
 - Characters that have a common design are grouped into families called Font Types
 - QUESTION: Can you name two Font types?

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Some Funky Fonts

Examples from: "The Non-Designer's Design Book by Robin Williams"
 Try out these websites → <http://www.flamingtext.com/Font-Baby-Kruffy>
 Free fonts from Google → <http://www.google.com/webfonts> (remind me to show you how you can use all these cool fonts!)

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- Most typefaces or fonts are divided into one of two categories: *Serif* or *Sans Serif*
 - **Serif**: has a fine line added to finish a letter stroke
 - Always use serif fonts for large paragraphs of text. The human eye finds them easier to read!
 - Examples: *Times New Roman, Courier*
 - **Sans Serif**: no line added
 - Best for headlines and headings
 - Examples: *Comic, Arial*
- <https://www.youtube.com/watch?v=Y50Dmh3SWys>
- (NOTE: the above video is just to get you thinking about fonts! Because Arial and Times Roman are standard on both Macs and Windows...it is FINE to use them ☺)



Serif



Sans Serif

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- **Style**
 - Variations in the appearance that allows the writer to emphasis parts of the text.
 - Some examples
 - **Bold Times New Roman**
 - *Italics Times New Roman*
 - Underline Times New Roman
 - **Bold Comic**
 - *Italics Comic*
 - Underline Comic

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Case

- Why does case matter?
- QUESTION: What does this say?
 - [Redacted]
 - [Redacted]
 - [Redacted]
 - [Redacted]

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- **Case**
 - In general it is **much** easier to read mixed case than all uppercase. Save uppercase for headlines.



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- **Kerning**

Rainfish

INCORPORATED

HEY, SHE'S CALLING YOU A LITTLE

WIMP

Decide on the typographic element that you want seen as a focus. Emphasize it with contrasts.

Examples from: "The Non-Designer's Design Book by Robin Williams

- **Leading** (pronounced Ledding)
 - Amount of vertical space between lines of text
 - As the length of a line increases, it is harder for the reader to jump to the next line, thus wide columns require greater leading.
 - Tracking and leading are also related, see the next example:

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Leading Examples

Loose Track More Leading

Okay, that might be a bit subjective but lots of Western students, including computer science students say that one of the factors that made them decide to come to Western to study was seeing the campus.

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Leading Examples

Loose Track Less Leading

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Leading Examples

Tight Track More Leading

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- **Monospaced Fonts vs. Proportional Fonts**
 - **QUESTION: Courier is Monospaced and Times New Roman is Proportional, can you see the difference?**

WWWMMM ← Courier
 I I I I I I

WWWMMM ← Times New Roman
 I I I I I I

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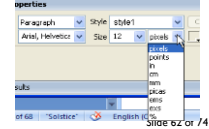
Review

- Typography

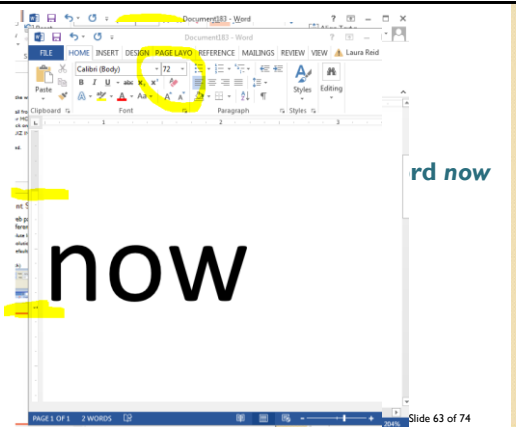
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Font Size

- Font size can be measured in several different units:
 - *points, picas* (as in MS Word, absolute length)
 - *pixels* (relative to the screens resolution)
 - *percentage, ems* (relative to the default browser font)
 - *inches, centimetres* (absolute length)



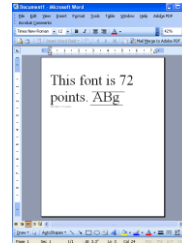
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Points (Absolute length)

- Commonly text is 12 points, this is 1/6 of an inch.



NOTE: A point size of 72, will always give you a font that is one inch high **when printed**.

If you sent this MS Word Document to a printer and measured between the lines, it would be one inch. For print it doesn't matter if you print from a Windows machine or a Mac, a 72 point font size on paper is always one inch high.

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Pixels, ems, % (Relative length)

- When text is displayed in *pixels, ems, %*, it is relative to the default font size for the browser and to the screen resolution.
- 1 em is equal to the width of an **M** in the default font type and size of the browser
 - E.g. Firefox → Times New Roman, Fontsize 16 pixels



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Experiment with Font Size

- If you are on your laptop go to: <http://www.csd.uwo.ca/~ireid/cs033/FontTest1.html>
- Then try the following:
 - Set the resolution to be the lowest: 800 pixels by 600 pixels
 - Set the resolution to be the highest.
 - View the page in IE and then pick View>Text Size and pick some of the different sizes. Notice the absolute fonts don't change, the relative ones do.
 - View the page in Mozilla Firefox, then pick Tools>Options then the Content Tab and change the Font Size.
 - Hold down the CTRL key and use the scroll button on your mouse

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Which Unit of Measurement to Use

- In general, don't use **points**, it is for printing.
- If you are worried about:
 - **Accessibility** → use **ems** or **%** since they are relative to the browser's default font and the user can make the text more readable
 - **Control** → if you want the layout to be precise, use **pixels**.

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Font Colour

• Colour

- If you look at the underlying HTML on a webpage you will see the colour for text is encoded in a strange way:

- <http://www.csd.uwo.ca/~lreid/cs1033/fontcolours.html>

- Hexadecimal representation

- Hex Digits are: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E, F

- With TWO space holders FF in decimal is big, 1F is small

- With TWO space holders FF in hex is big, 1F is small

- Colours must start with #

- Then you need 2 hex digits for Red, 2 hex digits for Green and 2 hex digits for Blue →

FF00 00

- Thus really bright red would be:

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• QUESTION

- How would you represent yellow?
- What colour do you think this is #222222?
- What colour do you think this is #CCCCCC?

• Answers:



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Things to remember when using text:

• Is text the best choice?

- Use text when it is the best way to convey information

• Make sure it is readable

- Use a dark background with light text or a light background with dark text
- Don't make the font too small
- Make sure the font is readable (be careful with weird fonts)
- Don't use too many fonts (2 or 3 different styles is enough)
- Don't crowd your text, have some white space
- Paragraphs are easier to read in serif, sans serif for headings

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More tips...

• Use text sparingly

- Remember it is sometimes hard to read on a computer screen
- Use bullets
- Break text up into sections
- Don't be too wordy

• Be consistent

- Pick a colour, size, and style of font you like and stick with it on all the pages

- **Spell check** → there is NO excuse for spelling mistakes!

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More tips...

• Avoid offending

- Don't use swear words or disrespectful language

• Set a mood

- Try to pick a font that goes with the tone of your site (for example **comic font** is great for kids)
- Make sure it coordinates/complements your images/graphics

• NEVER EVER EVER use underlining on a webpage → WHY?

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A Great Design Review in 50 Seconds!

- <http://mattgreenwood.tv/ELEMENTS-OF-DESIGN>

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