

GOOD HANDOUT DESIGN: HOW TO MAKE SURE YOUR STUDENTS ARE ACTUALLY LEARNING FROM YOUR LECTURE NOTES

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Does this sound like your experience with instructional handouts?

My students expect me to upload my PowerPoint slides to the Web, so I do, but I hope they're not really printing all 50 slides every week. What a waste of paper!

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While it's tempting to assume that this tech-savvy generation of Digital Natives doesn't want to take notes, we know that our students are still asking us for our lecture notes. At the same time, we've conditioned them to expect that our presentation materials (like slides and overheads) will be digitized and posted online for them to download.

When we're being asked for digital copies of both our slides and our notes, it's so easy to just upload the slides to a webpage and call it good. But are those slides really helping our students learn? If we're honest with ourselves, we know they're not.

But there's hope! Armed with a few basic principles of good document design, you can adapt your lecture notes into content-rich, information-packed handouts that your students can download instead of those not-too-useful slides.

EDWARD TUFTE: DOCUMENT DESIGN GURU

This document introduces a simple workflow to create instructional handouts using Word and a Web browser. These handouts are designed to be printed documents, but they work equally well as digital files. The document design principles discussed here are inspired by the work of data visualization expert Edward Tufte.

Tufte is the author-designer of four books about the visual display of information, the most recent of which is *Beautiful Evidence* (Graphics Press, 2006). A copy of each book is included with registration for his one-day course "Presenting Data and Information."

www.edwardtufte.com

Renowned for his attacks on PowerPoint, Tufte lectures and writes about the benefits of paper as a content-rich, high-resolution delivery method for presenting information.

CONTENT, NOT CLUTTER: BASIC DOCUMENT DESIGN PRINCIPLES

You don't need to be a graphic artist to understand the basics of good document design. Think about documents you see all the time, like menus and résumés – you never notice the design when it's good, but when it's bad it hurts your eyes!

THREE TUFTE TIDBITS: *"Design should be invisible."* *"Content counts most of all."*

"Maximize users' content-reasoning time; minimize their format-figuring-out time."

Lecture notes from Tufte's course: "Presenting Data and Information," attended in Portland, OR: 16 July 2008.

Good document design means not wasting students' time by filling up space with non-essential stuff -- I'm talking to you, clip art! -- and not abusing students' eyes by drawing thick black boxes and arrows and lines around the "important stuff" - these types of embellishments only draw the eye to the box itself, not to the information inside it.

To check your handout for bad design, hold a printed copy at arms' length, about 3 feet from your eyes. Something will jump out at you - what is it? An image? A box? A line? This is what Tufte calls the "most optically active point."

Everything on your handout should impart information – if it's not content, it's clutter.

DESIGN QUIZ: WHICH BOX DELIVERS CONTENT? WHICH DELIVERS CLUTTER?

On the Library homepage,
look for the link that says *Databases*.

- Library homepage **Click here!**
- **Databases**

ANSWER: Hold this paper at arm's length to see why the box on the right is lots of clutter and little content.

SENTENCES v. BULLETS

Tufte's principles guiding the visual display of content-rich information are useful for designing instructional materials because they allow us to create documents that maximize paper's capacity for information-density.

Unlike slides, content-rich handouts at the lecture level are documents that students can actually learn from, later, on their own. The following examples are from a Biology class at MHCC; the instructor, Dr Walter Shriner, lectures from Power Point, but he gives students a detailed handout for each lecture in lieu of printed slides.

HANDOUT:

B1103B: ANIMAL BEHAVIOR 2

WHAT IS THE BIOLOGICAL PHENOMENON?
 Almost all birds and mammals leave their birthplace and move away before they reproduce for the first time. This is called natal dispersal. In mammals, the males almost always go farther than females, while females usually stay close to home. In birds, the pattern is opposite. Why animals disperse and why the gender-based differences exist is the focus of this research. Dispersal has a definite cost associated with it. Individuals leave an area they are familiar with and dispersing individuals suffer high levels of mortality. In fact, in studies of a related ground squirrel, almost 90% of males die before they reach sexual maturity.

Holekamp and Sherman studied dispersal in Belding's Ground Squirrels from 1974 to 1985 near Yosemite National Park in the Sierra Nevada of California. They were able to mark individuals, capture individuals repeatedly, manipulate hormone levels, and observe their behavior. Over 5000 different squirrels were captured and observations totaled almost 6,000 hours.

In this population, the squirrels have a short active season—they spend only 4 or 5 months above ground before hibernating. Females give birth to litters of 5-7 babies. Most females reach sexual maturity as one-year-olds, but males do not typically breed until they are at least two.

Dispersal is a gradual process with young moving farther and farther from their natal burrow during daily movements. Dispersal is sexually dimorphic- 92% of males disperse before their first hibernation vs. only 5% of females.

OUR PROCESS
 For this case-study you are going to be presented with some hypotheses and/or experiments that were conducted to better understand why males disperse more often and farther. Your job is to come up with predictions or interpretations of the information presented. I have provided space for you to take notes. The process will be an "iterative one," that is, you will be presented with some information, then discuss it with your group, then as a class....

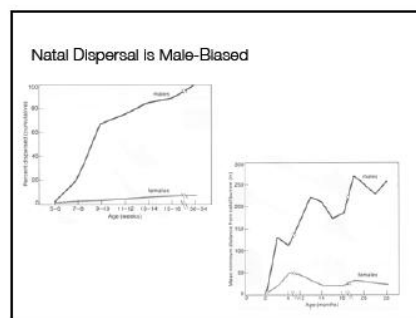
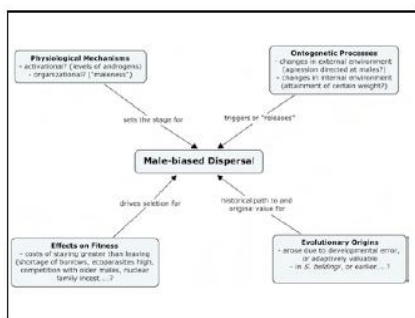
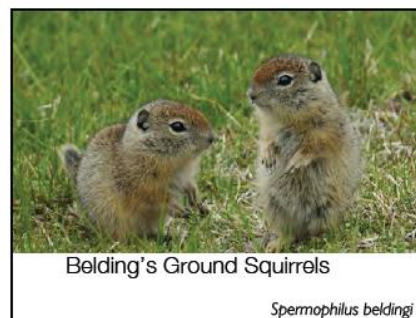
Dispersal is Dangerous!
 Example from a study of Ocelots
 (a type of cat)

Thanks to Dr Walter Shriner, MHCC Biology instructor, for his permission to include these examples.

SLIDES:

Why Male Ground Squirrels Disperse

A Case-Study to Understand Development and Multiple Levels of Analysis



MAKING HANDOUTS: A FIVE STEP PROCESS

The following process yields a printable handout that maximizes the high-resolution properties of paper while also allowing users to interact with the document online.

The handout is designed using the ubiquitous Microsoft Word (as opposed to a more advanced desktop publishing program) for ease of editing handouts from any computer.

A key component of the process is the conversion of the Word file to a PDF. Adobe's PDF has long been an industry-standard file type for preparing documents to print, because this format locks the document's text and graphics in place; your students don't need an editable file, they want to print the handout as the instructor designed it.

PDFs are viewed with Adobe's free Acrobat Reader software, and are also viewable in web browsers, making the PDF an excellent method for posting handouts online.

An optional final phase of the process involves making photocopies of the handout, preferably as an 11x17 booklet; on a copier with a Booklet feature, a four-page handout can be copied as a double-sided sheet of 11x17 paper that can be folded in half.

More about Acrobat and the PDF at <http://www.adobe.com/products/acrobat/>

1) CREATE A WORD DOCUMENT:

Create a template for consistent "branding" across all of your handouts.

Design the document in tables to align text with relevant graphics and notes.

If you're explaining a concept or a resource, write in complete sentences.

Activate hyperlinks so they'll be live links in the online PDF (see below).

Be discriminating in your use of boxes and arrows; use thin, gray lines.

Edit the content to fit an even number of pages, preferably 2 or 4.

Include content-relevant graphics such as screenshots of web resources.


Use color judiciously; remember that the end product is printed in Black & White.

Don't be afraid of narrow margins; 1/2" margins work with most printers and copiers.

Odd # = empty side of paper, and empty paper = wasted real estate!

FireShot is a free ad-on extension for editing screenshots in Firefox. More at <https://addons.mozilla.org>

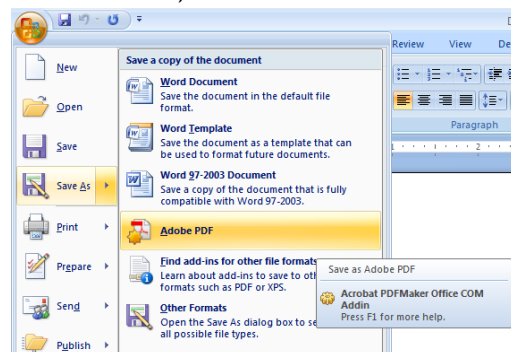
EXAMPLE OF A WORD FILE CREATED USING THESE PRINCIPLES:

		MHCC LIBRARY INSTRUCTION FOR BA285: A. WONG
MHCC LIBRARY HOURS: Monday-Thursday, 7:30AM- 9:00PM Friday, 7:30AM- 5:00PM Saturday, 9:00AM- 3:00PM Sunday, CLOSED	ASK A LIBRARIAN: Chat with us on the library homepage Email us at reference@mhcc.edu Call us at (503) 491-7516 Meet with us at the Reference Desk	FIND US ONLINE 24/7: On the MHCC website: www.mhcc.edu/library On the MyMHCC Portal: my.mhcc.edu/ics > Library
RESEARCH GOALS: To search for and locate library resources about historical and 20 th century leaders for your research paper; To access the MHCC Library's citation guides for MLA Style.		

Handouts created for MHCC Library instruction are customized for specific classes but share this basic template.

2) CONVERT THE WORD FILE TO A PDF:

In Word 2007, Save As to create a PDF:



(In older versions of Word, print to PDF by selecting Adobe PDF as a printer).

Acrobat PDFMaker is a free add-in for MS Office. More at <http://microsoft.com/downloads>

The PDFMaker add-in is included on your workshop CD as a file called *SaveAsPDFandXPS.exe*

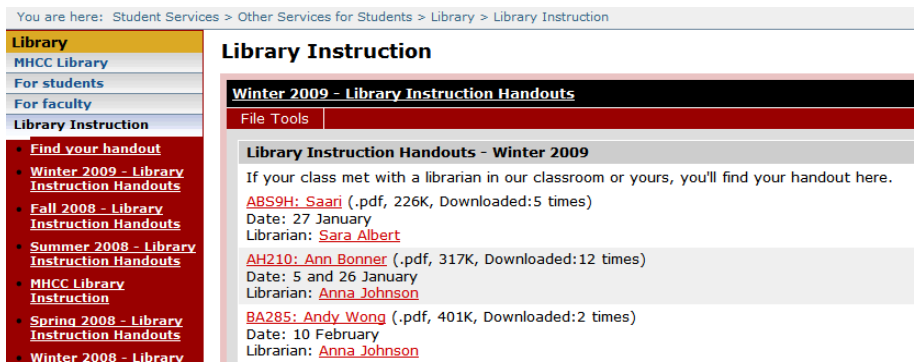
Acrobat Reader is free, but the full version (Acrobat Professional) is worth it. Ask your "computer guys" if your institution has a site license.

3) POST THE PDF TO YOUR COURSE WEB SPACE:

Acrobat Reader is a free download, so all users can easily access PDF files.

If possible, show students how to access the PDF for on-demand (re)printing:

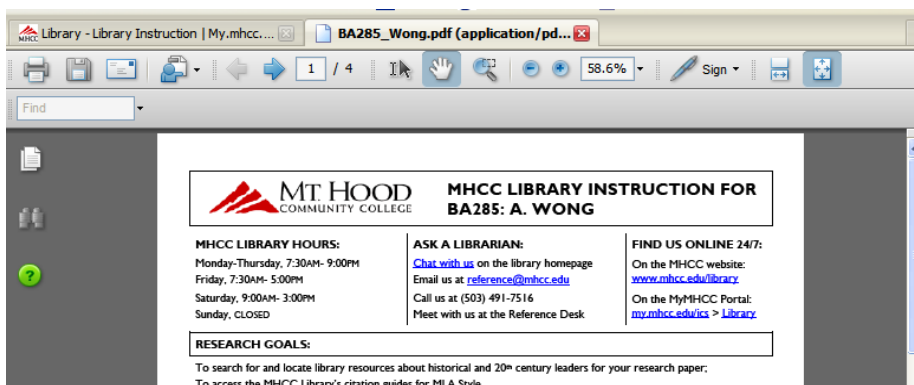
Download Adobe Reader for free at <http://get.adobe.com/reader>



MHCC librarians keep two years of instruction handouts online at:

https://my.mhcc.edu/Student_Services/Student_Support_Services/Library/Library_Instruction.jnz

Users can open the PDF in any Web browser, to read online or to (re)print:



In the web-accessible PDF, all of the hyperlinks are active and link directly to related resources.

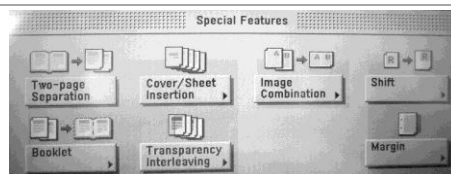
4) OPTIONAL - PRINT ONE COPY OF THE PDF:

If your file contains colors, make sure your content is still legible in grayscale.

4) OPTIONAL - MAKE PHOTOCOPIES FROM THE PRINTED COPY:

To make 11x17 handouts, look for your copier's Booklet feature.

EXAMPLE OF BOOKLET SETTING ON A CANON COPIER:



Four faces of 8.5x11 paper (an 11x17 handout) carries as much information as 150 PowerPoint slides - *Tufte*

If you can't make booklets, make stapled sets of double-sided copies.

When you use these design principles to create content-rich instructional handouts for your classes, you can stop thinking of your handout as a summary of your presentation, and start thinking of your presentation as a summary of your handout. Have fun!

ABOUT THE PRESENTER:

Anna Johnson is a member of the full-time faculty at Mt Hood Community College. She coordinates MHCC's Library Instruction program and teaches more than 100 course-integrated information literacy classes every year, each with its own customized handout. A document designer long before she was a librarian, at one time Anna could recognize more than 500 typefaces by sight, which made watching movie credits really fun and driving past billboards really distracting.

The best way to reach Anna is by email at anna.johnson@mhcc.edu

PCC Cascade TLC – 10 March 2010

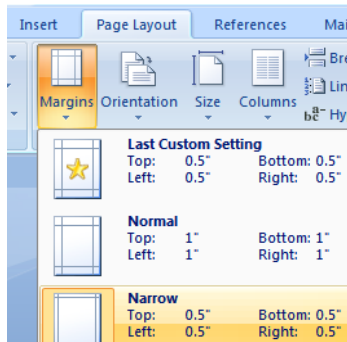
DOCUMENT DESIGN SUGGESTIONS FOR MICROSOFT WORD

Try these document design suggestions when creating handouts in Word (instructions are given for both 2007 and 2003 versions).

Margins: A narrow 1/2" margin maximizes page space while leaving plenty of edge room for printers & copiers.

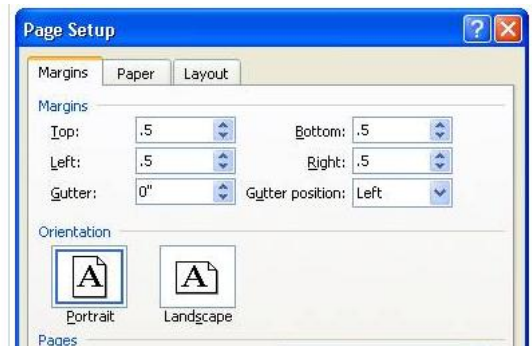
Word 2007:

Page Layout tab > Page Setup group > Margins



Word 2003:

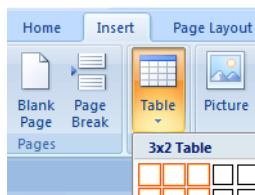
File menu > Page Setup > Margins tab



Tables: There are many advantages to designing your document in tables, especially when you want to align screenshots/ images with related text. You can split and merge cells to adapt your tables as you go.

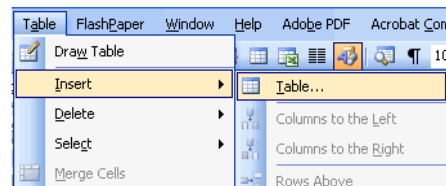
Word 2007:

Insert tab > Table group > Tables



Word 2003:

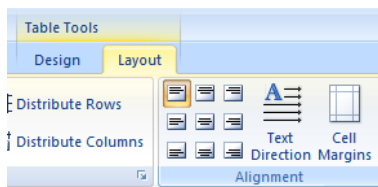
Table tab > Insert > Table



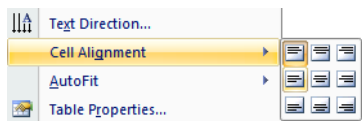
Cell alignment: When you design in tables, you want to make sure that your text is logically positioned in the table cell. Use the cell alignment commands to adjust horizontal & vertical alignment within a table cell.

Word 2007:

Table Tools tab > Layout tab > Alignment group

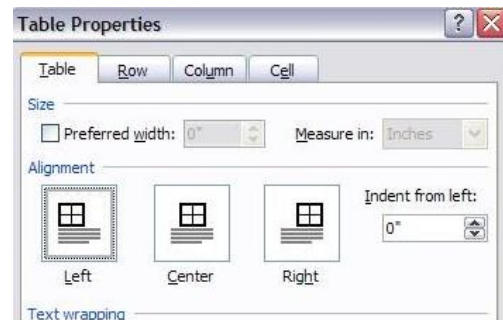


Or: right-click > Cell Alignment



Word 2003:

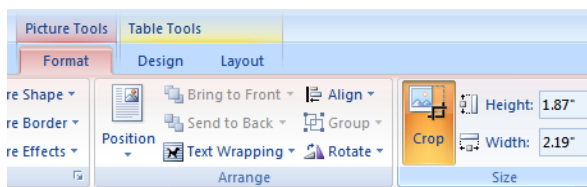
Table tab > Table Properties > Alignment



Picture crop tool: When you click on a picture in Word you activate the Picture Tools menu. Click the Crop tool to remove unwanted parts of an image by dragging from its sides or typing Height and Width in inches.

Word 2007:

Format tab > Picture Tools > Size group > Crop



Word 2003:

Double-click picture > Picture toolbar > Crop

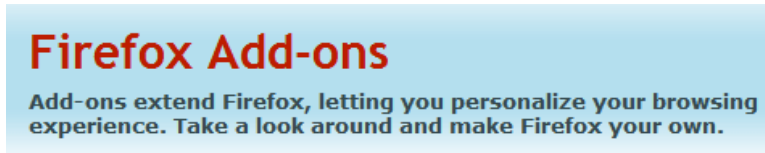


INSTALLING & USING THE FREE FIREFOX ADD-ON FIRESHOT

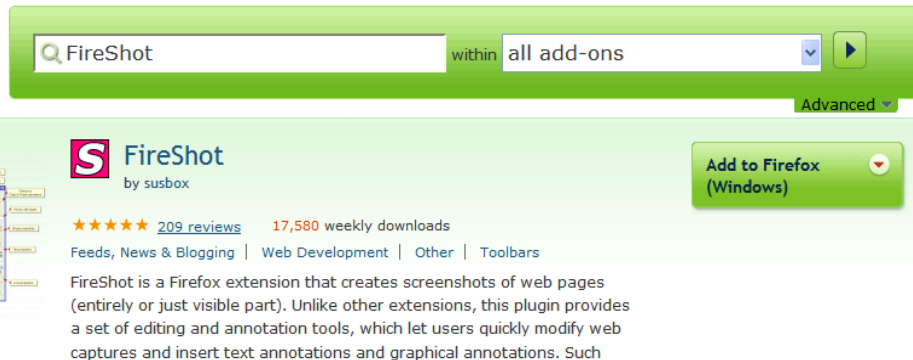
FireShot (Windows only) is a free add-on to the Firefox web browser to take, edit, and annotate screenshots from any Web page.

Launch the Firefox web browser (Free download at <http://firefox.com>)

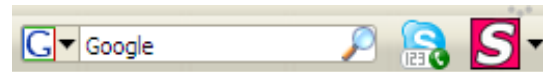
Go to the Firefox Add-ons page at <https://addons.mozilla.org>



Search for FireShot, then click the Add to Firefox button:



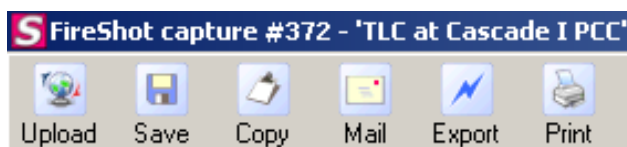
Install FireShot then close and re-launch Firefox. FireShot will have installed a button at the top right corner of the browser:



When you want to capture a web page image, click the FireShot button to take a picture (listen for the click!) FireShot will open your image in a new window. Play with the tools to crop, edit, and annotate your screenshot:



FireShot gives you several options for your completed image:



The Copy button puts the image in your clipboard so you can paste it into Word.

Use the Save button to download the image so you can send an annotated screenshot as an email attachment.

You can also activate FireShot from the down-pointing arrow next to the FireShot button.

Try "Capture entire page and edit" to save and/ or annotate a long web page without having to scroll:

