When [vision-competencies are] developed, they enable a visually literate person to discriminate and interpret the visible actions, objects, symbols, natural or man-made, that he encounters in his environment.

A visually literate individual is both a critical consumer of visual media and a competent contributor to a body of shared knowledge and culture.
A visually literate individual is able to...

• Determine the nature and extent of the visual materials needed
• Find and access needed images and visual media effectively and efficiently
• **Interpret and analyze the meanings of images and visual media**
• Evaluate images and their sources
• Use images and visual media effectively
• **Design and create meaningful images and visual media**
• Understand many of the ethical, legal, social, and economic issues surrounding the creation and use of images and visual media, and access and use visual materials ethically
Visual Literacy Array based on ACRL’s Visual Literacy Standards

PowerPoint
Best Practices
Visual Exercise #1
According to the picture superiority effect, pictures are remembered better than words—especially for casual exposure to information for limited time.

Use pictures and words together so they reinforce the same information for optimal effect.

See this effect used widely in marketing communications, such as posters, billboards, brochures, annual reports, etc.

Visual imagery is a powerful mnemonic tool that helps learning and increases retention compared to, say, witnessing someone read words off a screen.

Garr Reynolds, *Presentation Zen Design*
Picture Superiority Effect:

Pictures remembered better than words in cases of:
• casual exposure
• limited amount of time

Reinforce by using pictures and words together

Used extensively in:
• posters
• billboards
• brochures
• annual reports

Visual imagery is a powerful mnemonic tool that helps learning and increases retention.
One idea per slide
Preserve “white space”
A slide’s message should be understood within three seconds.
Make time to translate ideas into images
Who is your audience?
PowerPoint Assignment Guidelines
- Your audience is Cal Maritime students outside your major. What is the problem in a nutshell? Why should they care? How might it affect them? What can they do about it?
- All slides should be primarily graphical.
- All photos and other images must be high resolution, licensed for re-use, and include a credit that names the creator of the image.
- No bullet points.
- Choose your graphics carefully. Their purpose is not decoration. Their purpose is communication.
<table>
<thead>
<tr>
<th></th>
<th>5 points</th>
<th>7-9 points</th>
<th>10 points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slides 2-9</td>
<td>Graphic/image lacks credit (if applicable)</td>
<td>Slide difficult to read quickly due to interfering background, excessive</td>
<td>Graphic communicates effectively by following best practices</td>
</tr>
<tr>
<td></td>
<td>Notes box empty or too cryptic</td>
<td>text, size of text or graphics, color choices, pixelated images</td>
<td>Shows awareness of audience by addressing the “why,” “how,” or “what”</td>
</tr>
<tr>
<td></td>
<td>Animated elements appear out of order</td>
<td>More than 1 idea per slide</td>
<td>questions in assignment prompt</td>
</tr>
<tr>
<td></td>
<td>Number or speed of animations distracts from content</td>
<td>Lack of variety of graphics: over-reliance on 1-2 types of graphic (photos,</td>
<td>Slide is uncluttered, with clean object borders</td>
</tr>
<tr>
<td></td>
<td></td>
<td>maps, etc.)</td>
<td></td>
</tr>
<tr>
<td>Slide 10:</td>
<td>More than 3 style errors</td>
<td>1-3 style errors</td>
<td>No errors in APA style</td>
</tr>
<tr>
<td>Bibliography</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Recommended Reading


Big Data + Excel

Visual Exercise #2
The Best Stats You've Ever Seen

http://splicd.com/hVimVzgtD6w/251/302
Data, differences, and digging deeper

New data shows meaningful progress in reducing maternal mortality

ICP 2014: 7 million prices, 199 economies, 8 regions, and 15 partners

World Bank Open Data: free and open access to data about development in countries around the globe.

Find an indicator

GNI per capita, Atlas method (current US$)  Go

Browse data

By Country

By Topic

Indicators

Use our data

Featured

World Development Indicators

Open Finances

Projects & Operations

Open Government Data Toolkit

Recently updated

Education Statistics 08 May, 2014

Gender Statistics 08 May, 2014

View data catalog »

The World at a Glance

Economy & Growth

GDP (current US$)

$72.68 trillion 2012

Health

Life expectancy at birth, total (years)

71 2012
International Energy Statistics

Petroleum & Other Liquids
Natural Gas
Electricity
Coal
Renewables
Total Energy
Carbon Dioxide
Other
What factors are associated with poverty around the world? And how does the United States compare with other countries on these factors? Use data from the World Bank to explore these questions.

Excel Poverty Analysis Assignment
<table>
<thead>
<tr>
<th>Country Name</th>
<th>Indicator Name</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>% change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulgaria</td>
<td>School enrollment, primary (% gross)</td>
<td>104</td>
<td>105</td>
<td>106</td>
<td>105</td>
<td>105</td>
<td>105</td>
<td>102</td>
<td>100</td>
<td>102</td>
<td>103</td>
<td>103</td>
<td>103</td>
<td>-2%</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>GDP per capita (current US$)</td>
<td>1611.1</td>
<td>1579.3</td>
<td>1729.2</td>
<td>2030.8</td>
<td>2641.8</td>
<td>3249.3</td>
<td>3733.3</td>
<td>4313.4</td>
<td>5498</td>
<td>6798.1</td>
<td>6403.1</td>
<td>6334.7</td>
<td>293%</td>
</tr>
</tbody>
</table>

**Bulgaria School enrollment, primary (% gross)**

![Graph showing school enrollment percentage](image1)

**Bulgaria GDP per capita (current US$)**

![Graph showing GDP per capita](image2)
<table>
<thead>
<tr>
<th>Country Name</th>
<th>2010 School enrollment, primary (% gross)</th>
<th>2010 GDP per capita (current US$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>102</td>
<td>46615.51</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>103</td>
<td>6334.68</td>
</tr>
<tr>
<td>Barbados</td>
<td>120</td>
<td>15812.28</td>
</tr>
</tbody>
</table>
Table: Coal Consumption per Capita (Btu)

<table>
<thead>
<tr>
<th></th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>% growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>World</td>
<td>15888167.1</td>
<td>16218896</td>
<td>17101854</td>
<td>17897008</td>
<td>18873186</td>
<td>19508868</td>
<td>20245048</td>
<td>20613615</td>
<td>20742817</td>
<td>21288023</td>
<td>25%</td>
<td></td>
</tr>
<tr>
<td>China</td>
<td>21943574.7</td>
<td>22370001</td>
<td>23571896</td>
<td>28810520</td>
<td>31676617</td>
<td>36993715</td>
<td>40219476</td>
<td>42753436</td>
<td>45057351</td>
<td>50397744</td>
<td>52363287</td>
<td>139%</td>
</tr>
<tr>
<td>Thailand</td>
<td>5257795.63</td>
<td>5838397</td>
<td>6093837</td>
<td>6374360</td>
<td>6988469</td>
<td>7459008</td>
<td>8043338</td>
<td>8869805</td>
<td>9848881</td>
<td>9434044</td>
<td>10272512</td>
<td>95%</td>
</tr>
<tr>
<td>Vietnam</td>
<td>2300765.95</td>
<td>2800792</td>
<td>2828623</td>
<td>2948482</td>
<td>3433132</td>
<td>3883154</td>
<td>4488228</td>
<td>4744862</td>
<td>5045520</td>
<td>5897710</td>
<td>7023357</td>
<td>205%</td>
</tr>
<tr>
<td>Regional total</td>
<td>29502536.3</td>
<td>30019189</td>
<td>34294255</td>
<td>38133770</td>
<td>42108219</td>
<td>48136476</td>
<td>52781495</td>
<td>56467003</td>
<td>60852707</td>
<td>65729498</td>
<td>69650155</td>
<td>136%</td>
</tr>
</tbody>
</table>

![Coal Consumption Per Capita](chart1.png)

![Coal Consumption Per Capita](chart2.png)
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Data and calculations are accurate</td>
<td></td>
</tr>
<tr>
<td>Sheets labeled &amp; organized correctly</td>
<td></td>
</tr>
<tr>
<td>Appropriate charts</td>
<td></td>
</tr>
<tr>
<td>Charts are accurate and labeled</td>
<td></td>
</tr>
<tr>
<td>Concluding analysis</td>
<td></td>
</tr>
</tbody>
</table>
Annotated Map

Visual Exercise #3
Mapping with Google

Discover new ways to navigate the world around you with Google Maps and Google Earth.

Improve your use of new and existing features of Google’s mapping tools.

Choose your own path. Complete a project using Google Maps, Google Earth, or both.

Start Now

Google Maps Lessons & Project

Explore features of the new Google Maps. Learn to create and share custom maps using Google Maps Engine Lite. Taught by Google Maps Product Managers Daniel Demetri and Beth Liebert.

Course Information

Mapping with Google is a self-paced, online course where you will watch videos (or read text lessons) and apply the skills you learn.

Course completion requires an internet-enabled desktop or laptop computer.
Learning Outcomes

1. **News Research:**
Students will locate relevant news stories on a current issue in their major in order to select the most significant and reliable sources of information.

2. **Synthesis and Mapping:**
Students will create an annotated map in order to synthesize and organize information spatially.
Incident Map Assignment

- **Identify a topic** you would like to illustrate with a map.

- Identify **four significant events** related to your topic. These events should have occurred in different places within one country or region of the world. For many topics, Lexis/Nexis or CountryWatch will help with this.

- **Create a map** using Google Maps and mark the location of your four events using **pushpins**. Annotate each pushpin with date and brief summary (2 sentences) of each event in the **description**.

- Create **APA citations** for your sources and add them to their relevant descriptions.
38.297°N, 142.372°E

This location marks the epicenter of the earthquake. It occurred 43 miles from the coast of Tohoku, Japan. Areas of Japan predicted to be affected by the tsunami waves were given a 15 minute warning before their arrival.

The Northwest Passage Dispute

Russian leader Vladimir Putin maintained that Russia was still a major player in the Arctic and also called for the Northwest Passage to be an international strait. It was a rare situation because Russia, the E.U and the United States were all in complete agreement.

<table>
<thead>
<tr>
<th>Are incidents significant and all related to topic?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are incidents located accurately on map?</td>
</tr>
<tr>
<td>Are incidents described clearly and concisely?</td>
</tr>
<tr>
<td>Are sources reliable and cited correctly?</td>
</tr>
</tbody>
</table>
Infographics

Visual Exercise #4
Thank You to:

Caitlin Bagley
Gonzaga University

http://www.loexconference.org/2013/sessions.html
What is an Infographic?
Graphic visual representations of information, data or knowledge.

Value of Data Visualization
Create your own infographic to communicate a topic of your choice. Making your own will help you understand the issues of bias in data interpretation, so you'll be a more informed consumer of infographics that you see in the future.
Infographic Assignment

1. Pick a topic
2. Find data about your topic
3. Turn your data into an infographic
4. Cite data sets in APA format
SHARK ATTACKS

Why?
This infographic is on sharks attacks and their occurrences.

Shark attacks can be incredibly rare. In 2006, there were only 21 attacks worldwide, and the majority of those were on humans. This makes it less likely for a shark to attack you.

We didn't always have big data to look back on. In the past, attacks were a lot more dangerous. In the 1970s, there were only 30 attacks worldwide.

Graph analysis
Breakthroughs in the medical field have improved the chances of saving the lives of people who get attacked by sharks.

Do Sharks like eating people?

Shark Appetite
Sharks are known to feed on a variety of species, including fish, sea turtles, and even humans.

This is a very common misconception. Sharks are not hunting for us; they just mistake us for a smaller creature. We are not a natural part of their diet.

Data citation

NAME: BRENDAN BUONSIGNORE
THE FUTURE OF Maritime

This data represents projected growth in the maritime industry and the outlook for jobs in the maritime industry. It also looks at the pay and benefits of working in the industry.

Job Outlook

14%-20% GROWTH

Pay and Benefits

TOP 10% EARN > $99,690

References

View student infographics on Cal Maritime Library’s Facebook page: http://on.fb.me/1lPL67d
<table>
<thead>
<tr>
<th></th>
<th>50%</th>
<th>80%</th>
<th>100%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Communication &amp; Design</strong></td>
<td>Information is insufficient to interpret the topic and main points.</td>
<td>Infographic displays information graphically, but does not have visual appeal.</td>
<td>Infographic is colorful and visually interesting.</td>
</tr>
<tr>
<td></td>
<td>Visual elements interfere with main points.</td>
<td>Visual elements contribute to main points, but may be cluttered or confusing.</td>
<td>Visual elements support communication of main points and overall understanding of the topic.</td>
</tr>
<tr>
<td><strong>Data Accuracy</strong></td>
<td>Data is incorrectly represented and/or not factual.</td>
<td>Data is mostly correctly represented but contains some errors.</td>
<td>Data represented is presented correctly and without error.</td>
</tr>
<tr>
<td></td>
<td>Source of data not reliable.</td>
<td>Most units are labeled accurately, with minor errors.</td>
<td>All units are labeled accurately.</td>
</tr>
<tr>
<td></td>
<td>Units are not labeled or are inaccurate.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Citation</strong></td>
<td>No citations or citation completely incorrect.</td>
<td>Data citation contains some errors.</td>
<td>All data is correctly cited in APA format.</td>
</tr>
</tbody>
</table>
Reflective Comics

Visual Exercise #5
Thank You to:

Matt Upson
Oklahoma State University

http://www.loexconference.org/2013/sessions.html
Choose a country that has ratified the Kyoto Protocol. Collect reliable sources about that country’s efforts to meet the requirements of this treaty. Document what you find in a graphic research narrative.

Visual Research Narrative
Dude using those same keywords, New Zealand, agriculture and Kyoto protocol I found a publication that outlines New Zealand’s goals to reduce emissions.

And the best part is that other people can use our resources to do more research if they want to!

Before this class, Daniel and Kainen would only use Google to research, but after taking LIB100, they are using credible scholarly sources through academic databases. They now know the importance of using research that is credible and reliable.

Right on!!
<table>
<thead>
<tr>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does the comic address each of the reflection prompts?</td>
</tr>
<tr>
<td>Is there enough detail in words and/or images to be understandable? Are images related to story?</td>
</tr>
<tr>
<td>Is there enough organization in layout to be understandable?</td>
</tr>
<tr>
<td>Proofread for spelling and clean design?</td>
</tr>
<tr>
<td>Are sources reliable and relevant to topic?</td>
</tr>
</tbody>
</table>
Questions & Discussion

mhanson@csum.edu

http://www.slideshare.net/muumuulibrarian