

# SCHOOL OF JOURNALISM AND DIGITAL COMMUNICATIONS

## TE2060 INFORMATION GRAPHICS

### ASSIGNMENT / VISUAL ESSAY

#### Assignment Brief

Construct a visual essay that explains a range of important principles of visual communication and shows examples of how these are applied using computer graphics techniques.

#### Introduction

Information graphics are around us all the time however unless they are quirky attention grabbing or contain data we are interested in we rarely acknowledge their existence. Conversely though from an early age we are taught to recognise two very important infographics (see Fig 1) and if you have ever travelled on the London underground you would have used one of the most recognisable and world famous infographics the London tube map (see Fig 2) which was designed in 1931 by Harry Beck a London underground engineer.

Fig 1

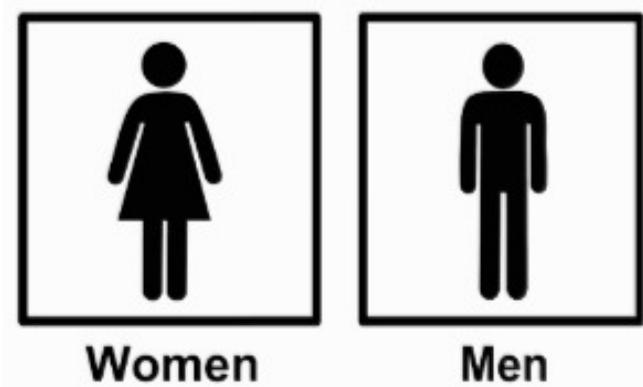


Fig 2



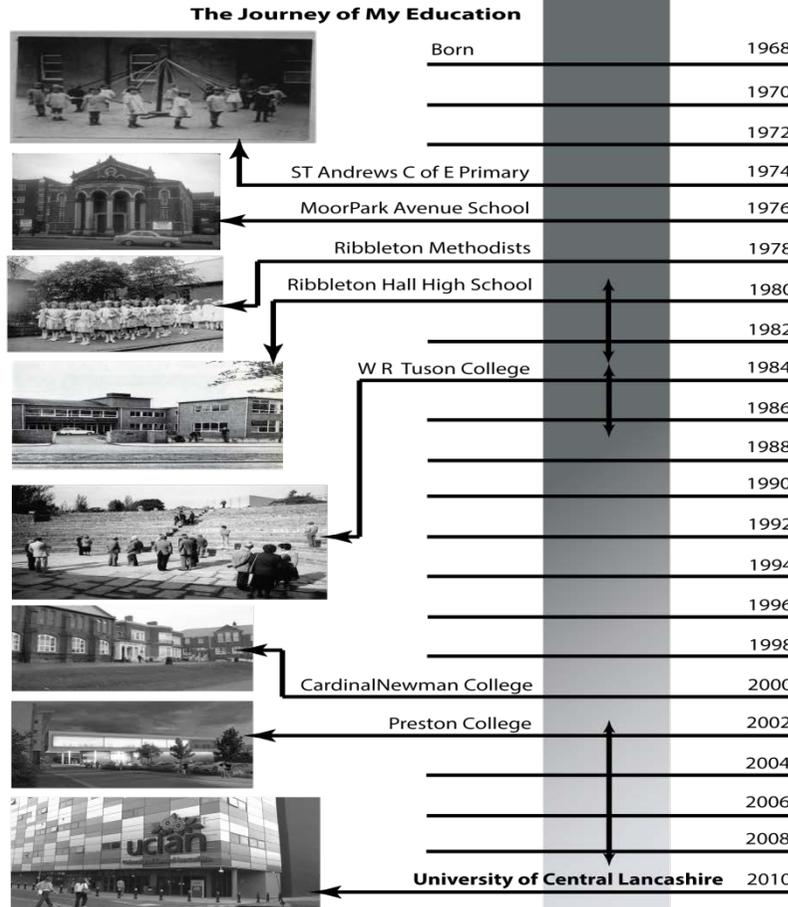
A good 'visual communication' or 'infographic' will convey a story or quantify data so it is immediately comprehensible yet able to disseminate intellectually and in some case subliminally the information. All this can be achieved using just a few principles of graphic design, some of which I have outlined in this visual essay.

Timelines

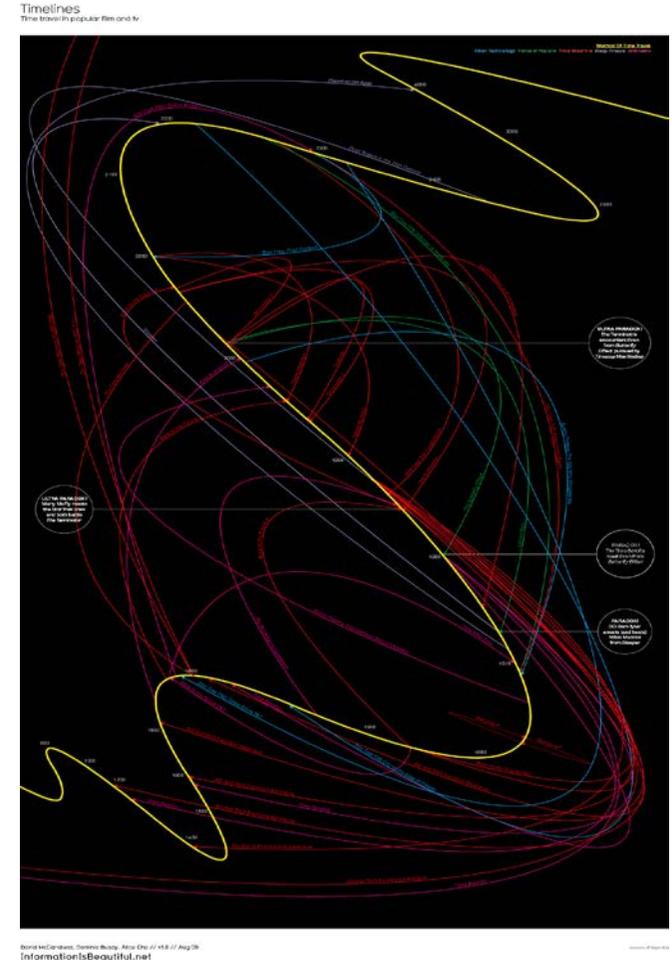
Timelines are used in the majority to layout historical events or to chronologically display information as it occurred within a measurable time scale. The timeline example on the left of the first 45 years of Star Trek is a typical layout with time segments evenly spaced out and arrows or lines indicating where the text and pictorial information occurred along the timeline.



The Star Trek graphic is arranged down a five column grid; one column in the centre two either side for the information. The images have been sourced from the internet and the whole infographic could have been produced in Photoshop or illustrator using line tools and filled shapes.



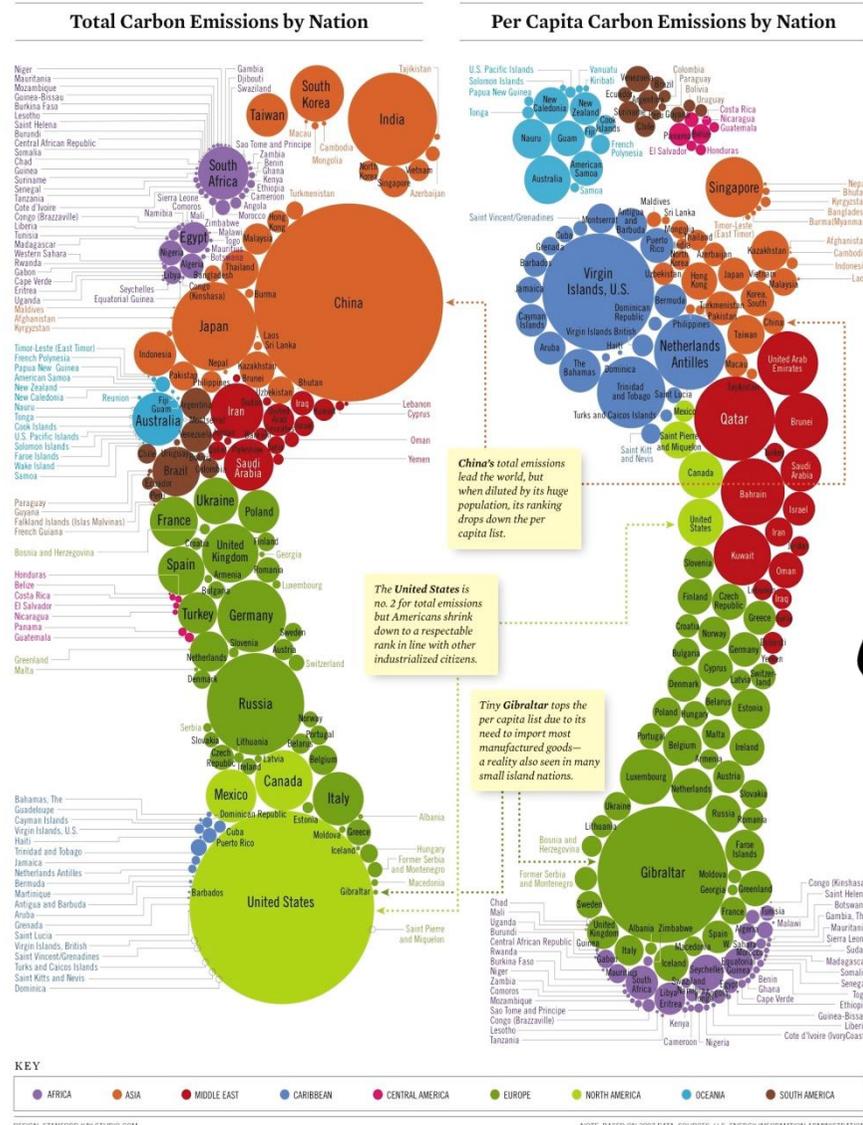
I produced the Timeline of my education to using Photoshop and illustrator



The timeline above is not archetypical; the time segments although linear are not proportionally spaced. The information is presented in such a way that it visually twists around the main timeline creating this rather beautiful graphic. To get the best control over the various curved splines the designer probably used design software such as Adobe Illustrator's pen tool.

# Tracking Carbon Emissions

A footprint comparison of total carbon dioxide emissions by nation and per capita shows there's plenty of room for smaller countries to reduce their carbon footprints.  
By Stanford Kay



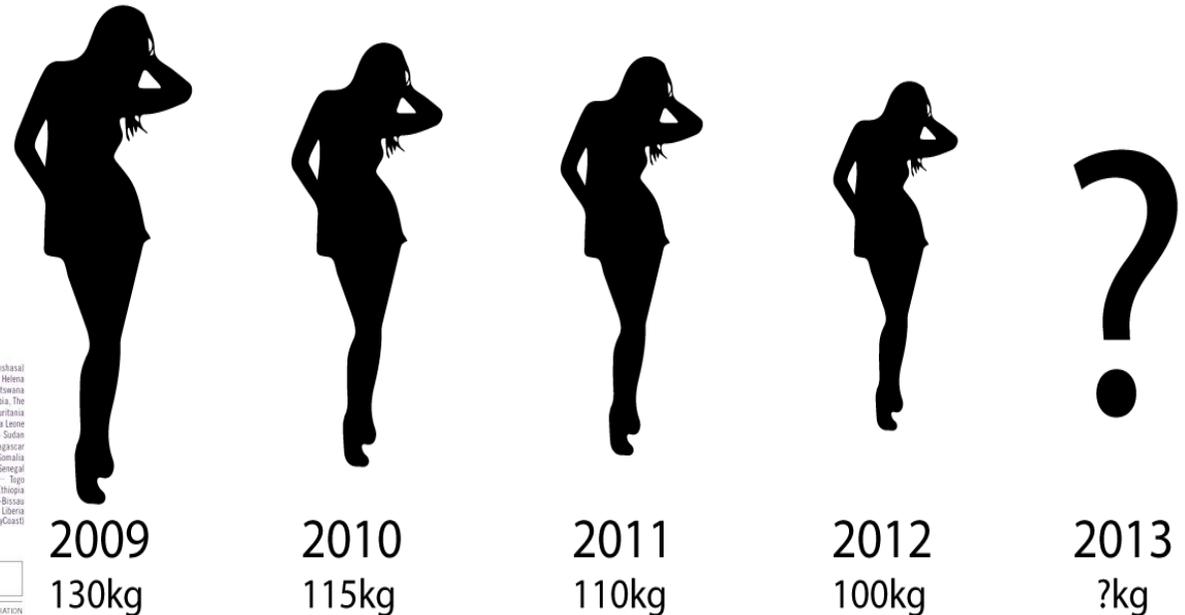
## Size Comparison

Sometimes the only way to display comparison information effectively is to take advantage of size. In the left hand infographic the artist has also used shape as well by arranging the size relative circles into feet or in this case carbon footprints.

When interpreting numerical data to visual objects you have to be careful with your mathematical calculations or the information becomes distorted and inaccurate. Using a scalable vector graphic would be a good approach.

The example below was fashioned in illustrator then each silhouette scaled by weight loss factor i.e. the 2010 figure was reduced by 85%, 2011 by 80% and 2012 by 70%.

## The Incredible Shrinking Women



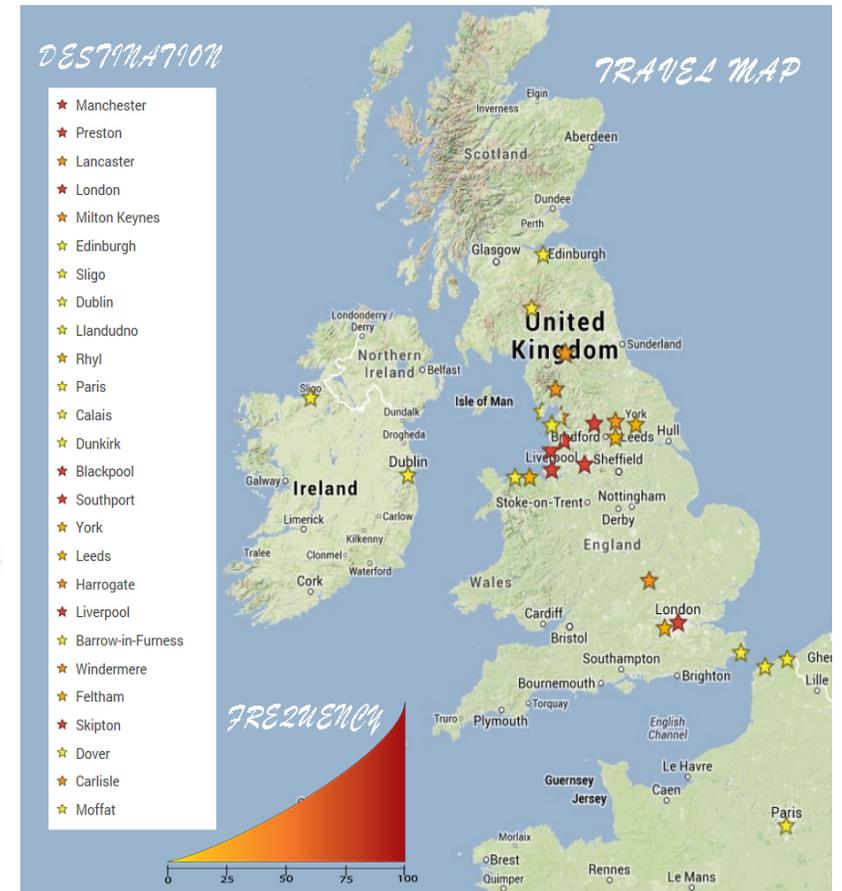
### Maps

The infographic below showing the population density of the United States of America for Time magazine is very effective. The simple colours and angled view of the three dimensional population spikes make it instantly obvious as to where the majority of Americans live in comparison to the scale of the country as a whole.



The map above on the other hand could have been produced using a sophisticated online 3d map modelling application. My map on the right was produced using a Google map application then doctored in Photoshop and illustrator.

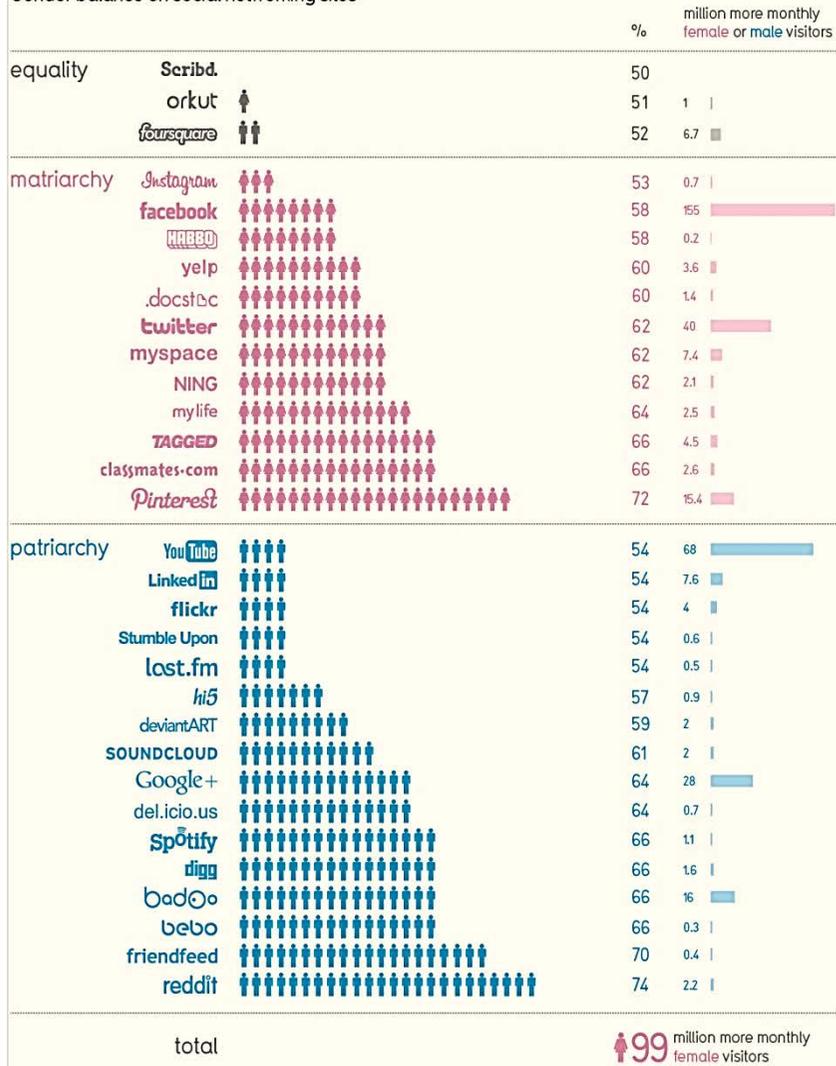
When presenting geographical data maps are a perfect platform. The relief in the Time Magazine image could have been produced using a 3d graphic software package or very accurately designed in illustrator.



Colours and typeface

Chicks Rule?

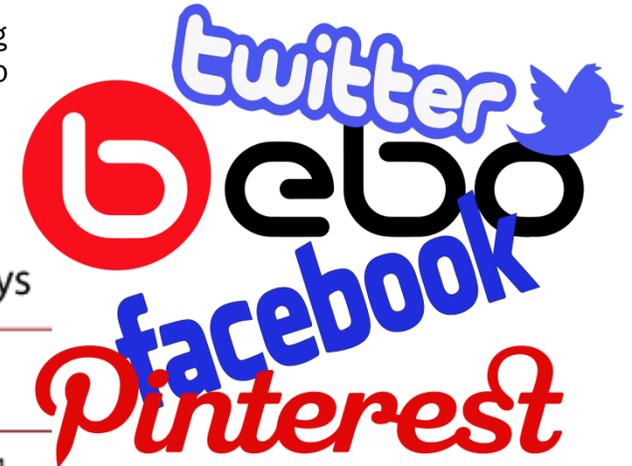
Gender balance on social networking sites



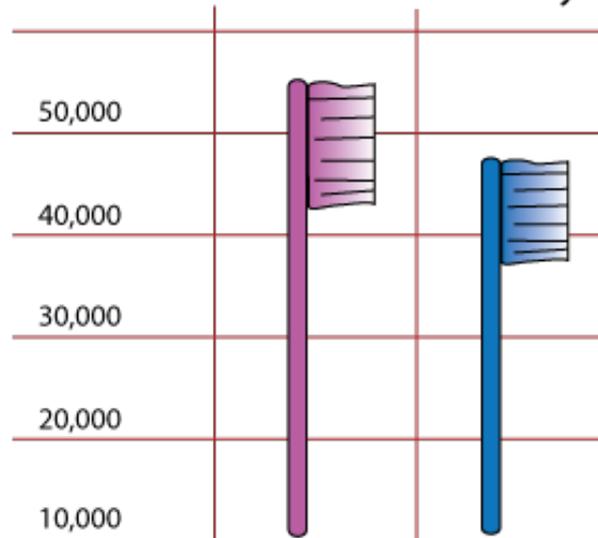
With information graphics sometimes you have to bow to convention when it comes to colour schemes such as the Chicks Rule histogram on the left which uses pink for girls and blue for boys. By using the two colours to divide the two very similar sets of data it is easier to see the difference and make a visual comparison.

The graph also makes use of recognisable type fonts for the social media websites. With copyright laws some of the type fonts used for these social sites are strictly protected so to reproduce them the designer would have to source them from websites such as Google fonts or cheat using illustrator.

The images logos here were produced using illustrators 'trace' element then recolored to imitate the original.



Tooth Brush Sales Girls V Boys



The tooth brush sales graphic illustrates the principle of colour even without knowing which is the girls and which is the boys we would assume as in the chicks rule histogram that pink is girls blue is boys

Grids

The best way to organise any graphic is with a grid system and information graphics are no exception. In fact as most are designed for print or websites based on columns and rows then arranging the visual data in this format is only logical.

In the stroke mortality rate infographic below it is easy to see the grid layout as it has been utilised to divide the information into four segments each with ten rows. However the grid beneath the Olympic pole vaulting information poster is not so easy to see until we overlay it with one.

**Stroke: Mortality**  
Stroke is a major cause of death and disability in the UK and across the world. What is stroke, how many people does it kill and how are mortality rates changing?

**Stroke: Who's affected?**  
Stroke kills more than 45,000 people in the UK every year, but some portions of society are at a higher risk. How is it affected and what factors influence it, including geography, ethnicity and occupation?

**Stroke: Care and costs**  
Thanks to improving prevention and treatment, fewer people are dying from stroke. But those who survive it need continuing care, especially in their later years. How much does this cost the UK economy?

**Stroke: Risk factors**  
Do you eat, drink and exercise enough to keep your risk of stroke low? Some of these relate to a genetic predisposition and some are things that others have to do with lifestyle and can be changed. What can you do about it?

**Pole Vault**  
The pole vault is a track and field event in which the athlete uses a long, flexible pole to propel themselves over a bar. The pole is made of a material that is strong and lightweight, such as carbon fibre or fiberglass. The pole is held by the athlete at the bottom and is bent as they run down the runway. As they reach the bar, the pole is straightened and the athlete is launched into the air. The pole is then bent again as the athlete falls, and the pole is caught by the ground crew.

**World record**  
m Steve Hooker (AUS) Beijing 2008 5.96m  
w Yelena Isinbava (RUS) Beijing 2008 5.05m  
m Sergey Bubka (UKR) Seefeld 1994 6.14m  
w Yelena Isinbava (RUS) Zurich 2009 5.06m

**INFOMANIA**  
NUMBER-CRUNCHING THE FAMOUS, THIS WEEK: Sir PATRICK STEWART

**THE CRITICS' CIRCLE**  
What the chin-strokers say

Engage **www** Encore

- Star Trek, X Men, The Eleventh Hour
- Gnomes & Juliet, Family Guy
- Hamlet, Macbeth, Woly Dick

**TOP GEAR CELEBRITY SPEEDS**

Simon Cowell 1m 47  
Patrick Stewart 1m 50  
Anne Robinson 1m 57

**Holidays in Blackpool**

**STARmeter:**  
Up 11% in popularity this week

**100%** British  
**20%** American

**MEASURING UP 5'10"**

Taller Than Captain Kirk & Simon Cowell

**STARsign:**  
**CANCER**

**Patrick Stewart**  
Is a Fan of Red Dwarf & Dr Who

[http://www.bbc.co.uk/topgear/show/tina\\_jags.shtml](http://www.bbc.co.uk/topgear/show/tina_jags.shtml)  
[http://en.wikipedia.org/wiki/Patrick\\_Stewart](http://en.wikipedia.org/wiki/Patrick_Stewart)  
<http://www.imdb.com/name/nm0001772/>

I developed the 'Infomania' info-graphic above using Photoshop techniques and images sourced from the internet. If you look carefully you can see that it has three columns and ten rows. It is very symmetrical compared to the Olympic info-graphic however because of the grid layout the Olympic one has balance and a strong visual flow around the pole vaulter which is the focal point of the whole info-graphic



Silhouettes

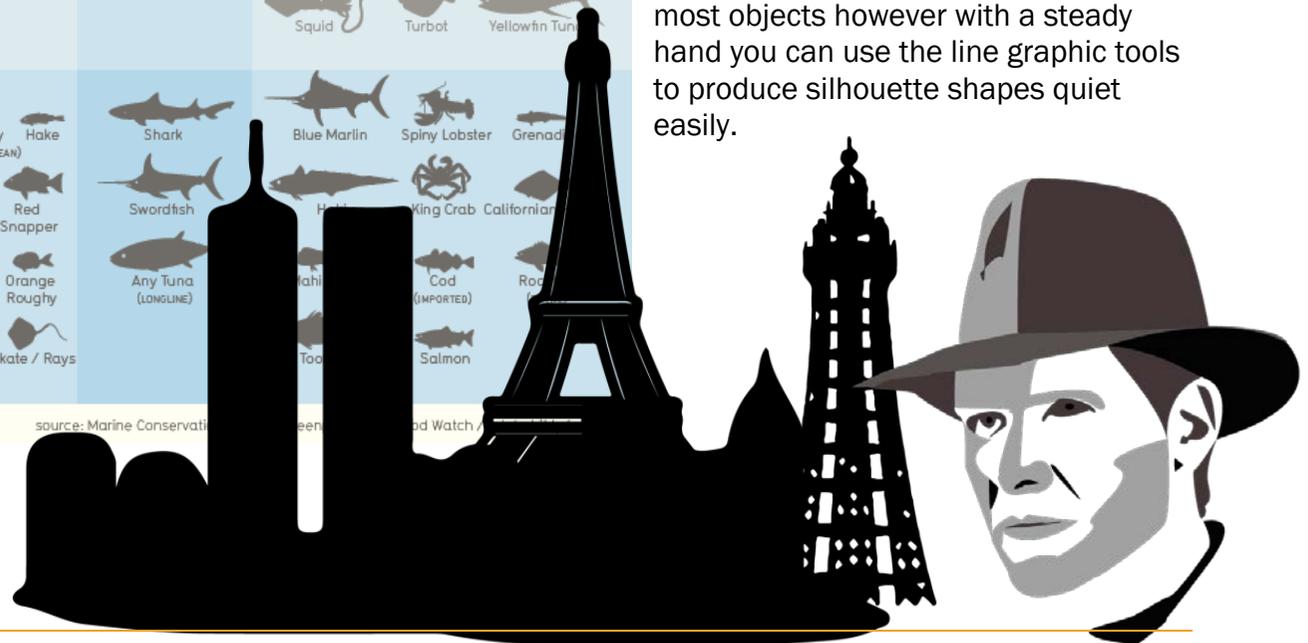
# Which Fish are Okay to Eat?

YES abundant, well managed or caught in an environmentally-friendly way  
 MAYBE fish are flagged for concern, and may be trawler-caught  
 NO vulnerable or endangered species, caught or farmed in harmful ways

YES	Farmed	Atlantic	Atlantic/Pacific	Pacific
	Coho Salmon Arctic Char Barramundi (us) Cobia Striped Bass Rainbow Trout Catfish Tilapia	Sardine (CORNWALL) Dab Flounder Red Mullet Black Bream Herring (NORWAY) Mackerel Gurnard Longfin Squid (SEINE) Seabass (LINE & GILLNET) Spider Crab (POT) Squid (AG)	Albacore Tuna (POLE) Big Eye Tuna (POLE) Spiny Lobster	Anchovy (PERU & CHILE) Blackcod/Sablefish Halibut Crimson Snapper (AUSTRALIA, TRAP) Salmon (ALASKA) Cod (LONGLINE, JIG, TRAP) Dungeness Crab (TRAP) Pink Shrimp (OREGON) Sardine Striped Bass White Seabass
MAYBE	Crayfish (CHINA) Basa Sturgeon	Haddock (LINE) Lemon Sole (SEINE) Coley/Saithe (TRAWL) Pollock (ALASKA) Cod (HOOK & LINE, GULF OF MAINE) Cod (NON TRAWL, ICELAND)	Skipjack Tuna (POLE & LINE)	Lingcod Flounder Californian Halibut (HOOK & LINE) American Lobster (TRAP) Pomfret Sole Mahi Mahi (LONGLINE) Squid Turbot Yellowfin Tuna
NO	Gilthead Bream Tilapia (CHINA) Salmon Eel Tiger Prawns Yellowtail Tuna Cobia (ASIA)	Salmon Monkfish Cod Halibut Anchovy Hake (MEDITERRANEAN) Herring (W. ATLANTIC) Sea Trout Spiny Dogfish (LINE) Dover Sole Red Snapper Chilean Seabass Rockfish Plaice Haddock (TRAWL) Orange Roughy Seabass (TRAWL) Yellowfin Tuna Halibut (GREENLAND) Skate / Rays	Shark Blue Marlin Spiny Lobster Grenadine Swordfish Herring King Crab Californian Any Tuna (LONGLINE) Mahi Mahi Cod (IMPORTED) Rockfish Tautog Salmon	

Sometimes it is not what you see but what you cannot see that makes a graphic visually effective. This example showing the depletion of fish in the oceans uses silhouettes of the fish shapes rather than actual photos or life like drawings. This allows you to concentrate on the information without being distracted by the images of the fish. It also allows the designer to use colour shading to show which fish are the most vulnerable.

Some images are so recognisable by their silhouettes that they do not need to be shown in detail. Illustrator has a trace tool that will create an outline of most objects however with a steady hand you can use the line graphic tools to produce silhouette shapes quiet easily.



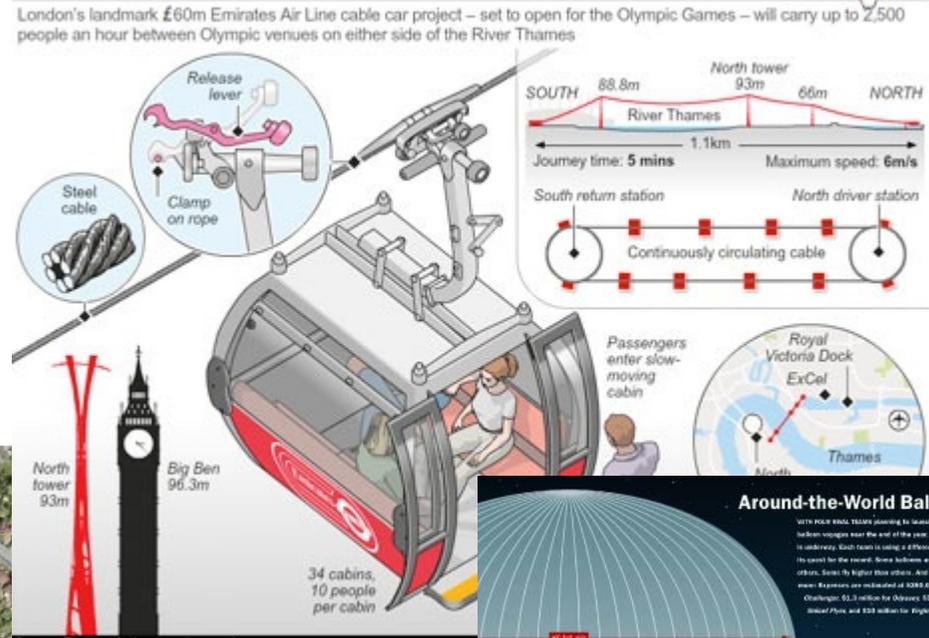
### Pop outs

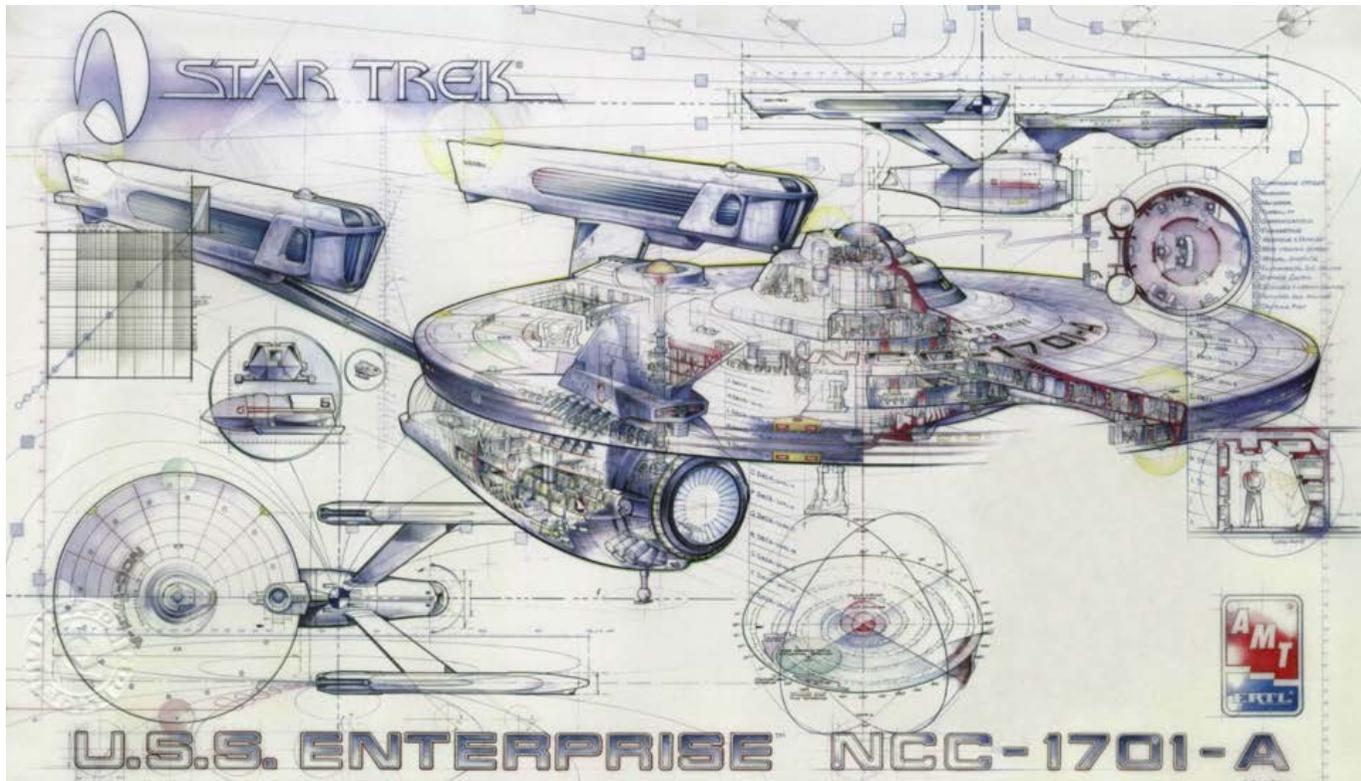
Sometimes within an infographic you find the necessity to enlarge or reveal more detail from a segment of a diagram. This is conventionally done by using a 'pop out' window as demonstrated in the London gondola graphic. The balloon graphic has used 'pop outs' however they have been styled in the shape of the capsules to show the different layouts.

In both cases the enlarged area is a diagram and could have been produced using a variety of drawing tools.

In the graphic below showing the location of a property, I have used a 'pop out' in the shape of a house to enlarge the bird's eye view of the address in more detail. I created the shape using the custom shape tools in Photoshop and a vector mask over a print screen image of the area zoomed in on the Google map.

### London gondola across River Thames





### Cutaways

Cutaways to reveal the inner details of an image are normally used for buildings to show the floor layouts or something that has moving parts such as an engine which needs to be exposed so as to explain the inner workings.

They can also be used for technical drawings and blueprints like the science fiction star ship.

3D designs are normally created using specific software such as 3Ds Max, or free hand drawn and scanned into vector graphic software.

I created the two coffee cups using illustrator.



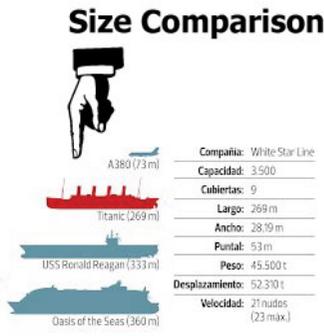
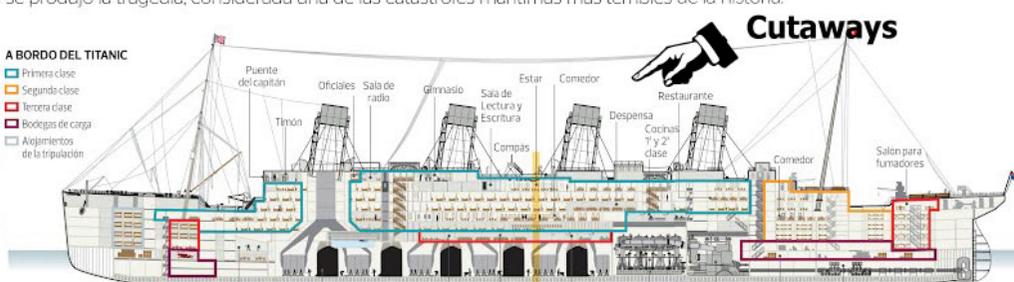
By combining a variety of infographic principles you can portray a wide range of information on a subject that is visually intelligible even when in a language that you don't speak or read. Take for instance the visual communication aspects of the infographic on the sinking of the Titanic below.

TITANIC [100 AÑOS]

[100 AÑOS] TITANIC

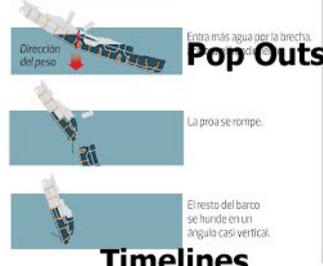
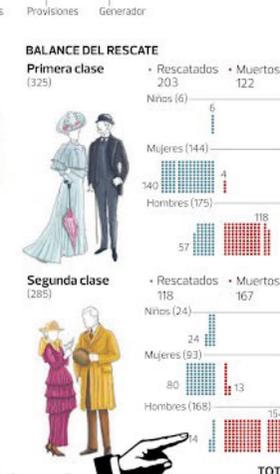
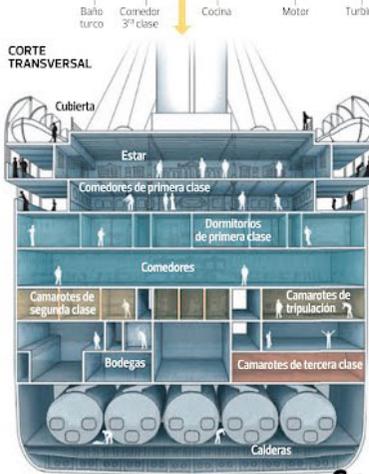
# El recuento de la catástrofe

La noche del 14 de abril de 1912, el Titanic, el vapor más grande construido hasta entonces, choca con un iceberg en el Atlántico norte y se hunde casi tres horas después en la madrugada del lunes. Así se produjo la tragedia, considerada una de las catástrofes marítimas más terribles de la historia.



### PROTAGONISTAS

- Edward John Smith**  
(27-01-1850 - 15-04-1912)  
Marino mercante, famoso por ser el capitán más prestigioso de la White Star Line y por ser el primer y único capitán del RMS Titanic.
- Frederick Fleet**  
(15-10-1887 - 10-01-1965)  
Marino y militar, trabajó como vigía. Fue el primero en dar el grito de "Iceberg al frente!". Posteriormente, testificó que, de haber tenido binoculares, habría dado la alarma a tiempo.
- William McMaster Murdoch**  
(28-02-1873 - 15-04-1912)  
Era el oficial al mando en el puente del Titanic la noche en que este colisionó con un iceberg. Murió en el hundimiento.
- John George 'Jack' Phillips**  
(11-04-1887 - 15-04-1912)  
Radiotelegrafista principal del Titanic. Mientras el barco se hundía, él seguía enviando mensajes para pedir ayuda.
- Harold Sydney Bride**  
(11-01-1890 - 29-04-1956)  
Radiotelegrafista subalterno. A las 12:15 p.m. fue el primero en dar el grito de auxilio. Fue el primero en transmitir la isla de hielo que se hundió.



## Summary

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I have by no means covered every visual communication principle in the essay, however you may now have a better grasp the thought that goes into making the infographics you see in newspapers, magazines and websites. And next time you see one, even if its not on a subject that your interested, in you might take time to appreciate the design techniques that went into creating it.

## Sources

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