

# How to design a poster

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**A poster is a piece of paper or board mounted on a wall or other vertical surface designed to either attract the attention of groups of people to specific information, or to persuade people to think or act in a particular way. They usually include text, images and/or other graphic elements, but they can be either entirely graphical or entirely based on text. As posters are primarily a visual medium they are useful to communicate with people who are illiterate or who do not speak the native language. They are also quick way to communicate headline messages.**

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This booklet gives general guidance about how to go about designing an effective poster, with particular reference to project posters.

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Designed and produced by WEDC Publications

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Published by WEDC, Loughborough University

ISBN 978-1-911252-06-1

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### DNA Replication

academicposter.net

**Definition**  
DNA replication is the process of producing two identical replicas from one original DNA molecule. This biological process occurs in all living organisms and is the basis for biological inheritance. DNA is made up of two strands and each strand of the original DNA molecule serves as template for the production of the complementary strand, a process referred to as semiconservative replication. Cellular proofreading and error-checking mechanisms ensure near perfect fidelity for DNA replication.

**Steps**

- 1) The first major step for the DNA Replication to take place is the breaking of hydrogen bonds between bases of the two antiparallel strands. The unwinding of the two strands is the starting point. The splitting happens in places of the chains which are rich in A-T. That is because there are only two bonds between Adenine and Thymine (there are three hydrogen bonds between Cytosine and Guanine). Helicase is the enzyme that splits the two strands. The initiation point where the splitting starts is called "origin of replication". The structure that is created is known as "Replication Fork".
- 2) One of the most important steps of DNA Replication is the binding of RNA Primase in the initiation point of the 5'-3' parent chain. RNA Primase can attract RNA nucleotides which bind to the DNA nucleotides of the 5'-3' strand due to the hydrogen bonds between the bases. RNA nucleotides are the primers (starters) for the binding of DNA nucleotides.
- 3) The elongation process is different for the 3'-5' and 5'-3' template. a) 3'-5' Template: The 5'-3' proceeding daughter strand (that uses a 3'-5' template) is called leading strand because DNA Polymerase can "read" the template and continuously adds nucleotides (complementary to the nucleotides of the template, for example Adenine opposite to Thymine etc).
- 4) In the lagging strand the DNA Pol I (endonuclease) reads the fragments and removes the RNA Primers. The gaps are closed with the action of DNA Polymerase (fills complementary nucleotides to the gaps) and DNA Ligase seals the phosphate in the remaining gaps of the phosphate-sugar backbone.
- 5) The last step of DNA Replication is the Termination. This process happens when the DNA Polymerase reaches to an end of the strands. We can easily understand that in the last section of the lagging strand, where the RNA primer is removed, it is too difficult for the DNA Polymerase to seal the gap (because there is no primer). So, the end of the parent strand where the last primer binds isn't replicated. These ends of linear (chromosomal) DNA consists of noncoding DNA that contains repeat sequences and are called telomeres. As a result, a part of the telomere is removed in every cycle of DNA Replication.
- 6) The DNA Replication is not completed before a check of repair fixed possible errors caused during the replication. Enzymes like nucleases remove the wrong nucleotides and the DNA Polymerase fills the gaps.

## Introduction

Posters are intended to inform or to persuade using primarily visual methods. Communicating in this way is different from communicating using only written text or speech and requires a different approach from writing reports or giving presentations. However, as with other forms of communication it is important to consider your audience.

## Your audience

As a poster is all about communication, you will need to think about the group of people you are trying to communicate with at all stages of production. Keep your purpose in mind at all times. Are you trying to inform or persuade? Before designing the poster, ask yourself the following questions.

- Who is the poster for?
- What does your audience already know?
- What is your audience interested in?
- Who is the poster by?
- Why is the poster being produced?
- How big is your audience?

## Location

Advertisers use billboard posters for mass campaigns designed to attract attention from several metres away. At a conference, however, posters may only need to read from a distance of one or two metres. All the same, A1 or even A0 sizes of paper may be required.

Ask yourself two additional questions:

- Where will the poster be displayed?
- How far away is your audience going to be from the location of the poster?

If you are only aiming at one reader at a time, then an A4 poster may be adequate. A large number of smaller posters (usually known as 'flyers') may be more effective in certain circumstances and can be easier to produce and transport.

## Elements of poster design

Whilst a poster is primarily a visual medium and should therefore have visual impact, care should also be taken over the content which should be written in an appropriate style and laid out in a hierarchy of importance.

So the three aspects of design that work together to make a good poster are its **content**, its **layout** and its **visual impact**.

### Why Collaborate?

Examining the impact of faculty & librarian collaboration on students' information literacy skill development in the First Year Seminar (FYS)

<http://project1.com>

**Methods**

- Year of Seminar Student Survey
- End of Semester Student Survey
- Librarian Survey
- Faculty Survey
- Faculty Interviews

**Project Results**

**Starting Points**

- 1. 98% of students used library resources
- 2. 82% of students used library resources
- 3. 77% of students used library resources
- 4. 67% of students used library resources
- 5. 58% of students used library resources
- 6. 64% of students used library resources

**Relationships**

- 1. Mean collaboration score
- 2. Mean frequency of class taught by librarians per FYS
- 3. Mean frequency of class taught by librarians per FYS

**Collaboration & Students' Use of Library Information Resources**

The closer faculty-librarian collaboration score was, the greater the students' use of library resources.

**Where Collaboration Fell Short**

Overall scores were 50% (DL) and 50% (DL).

**Actions & Recommendations**

- Immediate Action
- Shift to Practice
- Shift in Thinking
- Wider Implications
- Future Planning

**Scientific posters:** Most scientific posters for presentation at conferences contain too much detailed information which would be better disseminated using flyers. Even so there are ways of presenting deeper levels of information in an appealing way as shown above. If you google 'academic posters' and take a look at the images there, however, you will find many examples of poor practice.

	Millimetres	Inches
<b>A0</b>	841 x 1189	33.1 x 46.8
<b>A1</b>	594 x 841	23.4 x 33.1
<b>A2</b>	420 x 594	16.5 x 23.4
<b>A3</b>	297 x 420	11.7 x 16.5
<b>A4</b>	210 x 297	8.3 x 11.7
<b>A5</b>	148 x 210	5.8 x 8.3
<b>A6</b>	105 x 148	4.1 x 5.8

## Poster production steps

To make designing a poster less intimidating for those who are not familiar with the process, it is helpful to break the task down into a series of production steps as follows:

1. Planning the message (content)
2. Visualising the message (layout)
3. Finding the right imagery (visual) and:
4. Testing the draft
5. Revising and finalising

### Step 1: Planning the message

However good a visual image may be, it will be of no use for a poster if it does not effectively communicate an aspect of the intended message. The message may be a simple slogan to encourage people to wash their hands or a summary of a complex project. To ensure that the content is clear but concise, the author should identify and review information creating a hierarchy of points and themes. This is a difficult skill as the usual temptation is to add more than less content, but this can reduce the impact of the poster.

### Step 2: Visualising the message

Posters, like presentations and reports, need to tell a story, albeit a very short one. The layout is the bridge between the content and the imagery. It determines how viewers are going to see the final design and encourages them to

follow a route through the information. People tend to make up their minds about a poster in an instant. Unless it immediately engages them, they will not look at it in detail. Once their attention has been attracted, it needs to be sustained.

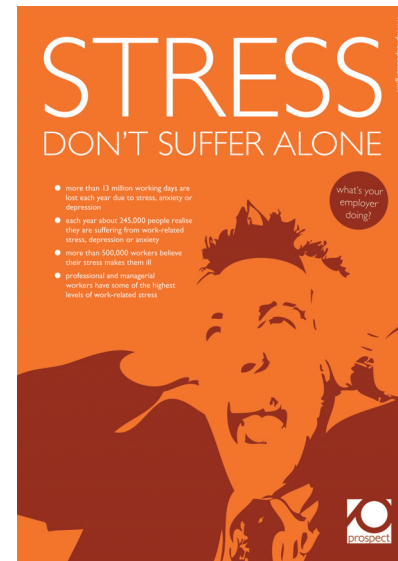
The layout of the poster is therefore critical. Essentially, a layout is the combination of appropriate levels of text, images and graphics and a colour theme that draws these elements together.

Posters are all around us. Before you start to design your poster, reflect on the huge variety of approaches to poster design you notice. Be critical and keep a mental note of any aspect of a poster that catches your eye.

Then consider the following factors to help you visualise your own poster.

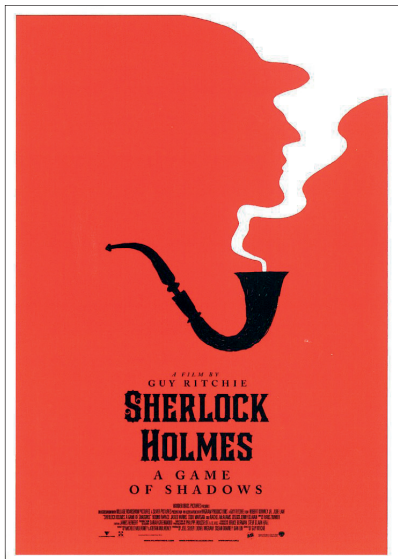
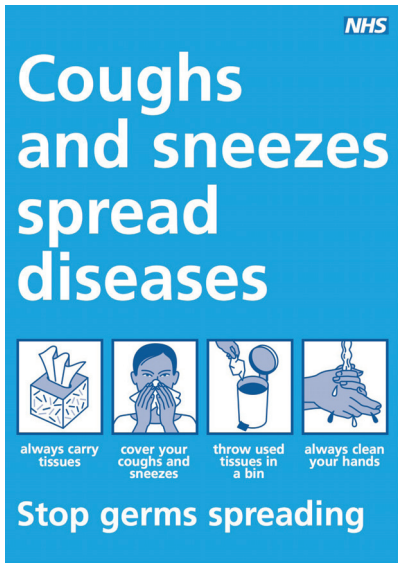
#### Project posters – questions of content

- What is the project about?
- Why is it important?
- What occurred?
- What were the results – and the conclusions?
- How can the viewer find out more?



Top: The human face used in different ways. Below: Wit and simplicity – both attract attention.



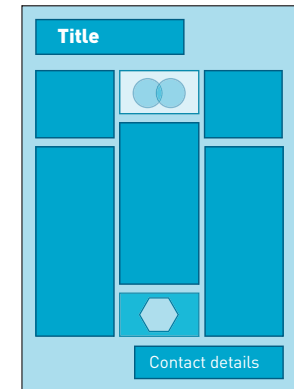
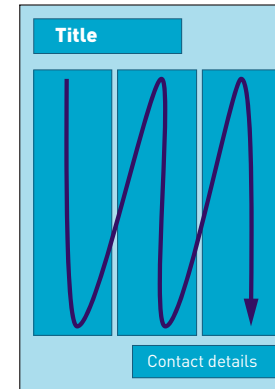


Further examples. Top: Strong use of text. Below: Strong use of imagery.

### Layout

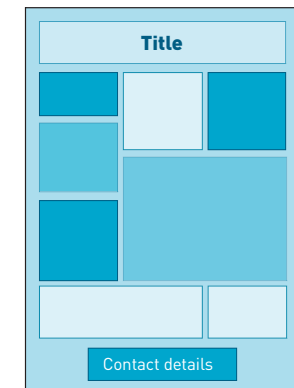
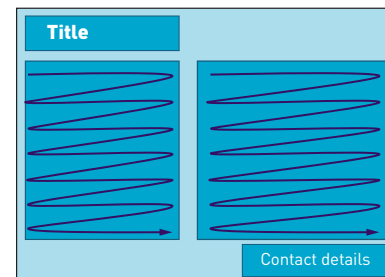
There are numerous ways in which a poster can be laid out and this will be determined initially by the amount of text. For a project poster, a common pattern is to structure the poster like the page of a book, reading from top right to bottom left.

Adding headings and breaking the text into blocks gives the reader more guidance. Diagrams can be added to provide more information and visual interest. Breaking the text into too many blocks however can make the path through the text less obvious.



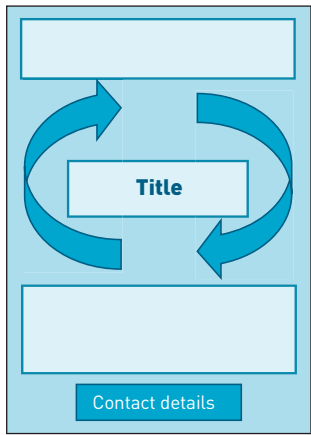
Columns help the reader follow the text. A balance has to be met between having too many or too few columns. Layouts can work better in portrait (long edge vertical – above) than landscape (long edge horizontal – below). The latter can lead to long lines of text which are more difficult to read.

It may be that a layout does not require such an obvious structure. In this case, a grid system will still be important to hold the elements together.



All these layouts have a strong structure but are based on variations of text-based layouts. This can lessen their visual impact.

By focusing on the main message, other visual layouts may be suitable, communicating concepts more efficiently than lots of words.



A design can be described as 'balanced', having 'direction' or 'rhythm'. Consider alternatives before deciding which you think will be most suitable given the text and images you need to include.

**Text**

With care, text can be used as part of the visual message. Different fonts will change the **character and mood** of the message. There is a wide variety of fonts to use, but it is better to use only one or two different fonts and to use standard typefaces such as Arial, Helvetica or Swiss, for example, as these are easy to

**Expertise**

Graphic designers have experience and skills that go far beyond the scope of this booklet but the issues mentioned will enable the reader to discuss the content with the designer and raise awareness of some of the basic aspects of design. This gives the designer a good idea of what is required and he or she can produce the final artwork.

read. These are termed 'sans serif' fonts. Emphasis can be added by using **bold** or *italic* text.

People need to be able to read the poster, from a distance. Here are recommended minimum font sizes for typical sizes of paper.

- For A4 use a minimum of 12 pt
- For A3 use a minimum of 16 pt
- For A2 use a minimum of 24 pt
- For A1 use a minimum of 34 pt

Text can also be used as a visual image, with words taking the shape of an object. This is a good way of attracting attention and getting a message across quickly, but does require good graphical skills.

Other posters in this series, each with a unique colour scheme and quality images relevant to the subject.




# Slope Alarms

## — Listening for Landslides

- **Acoustic slope monitoring system**
- **Low cost solutions**
- **CE marked sensors**
- **High sensitivity**
- **Award winning**
- **Robust**

- Provides information on slope displacement rates continuously and in real-time
- Proven performance at multiple sites in UK and overseas
- In operation for more than 5 years in a variety of environments



- Sensor elements are located at ground level for ease of maintenance and reuse. The technology comprises a simple waveguide design, with one sensor able to inform timing of site inspections and trigger manual reading of inclinometer casings.

### Technical details

- The sensor architecture protected by a UK patent (GB 2467419) is sensitive to small displacements and very slow displacement rates with continued operation at large displacements.
- Low cost materials are installed in the borehole and the overall cost is lower than current sub-surface deformation monitoring instrumentation such as in-place inclinometers.

### UK sites

- Nafferton Embankment, Newcastle-Upon-Tyne
- Ruthlin & Dyffryn, Monmouthshire
- Hollin Hill, North Yorkshire
- Flat Cliffs, Filey, North Yorkshire
- Scarborough Spa, North Yorkshire
- Toton, Southampton

### International sites

- Peace River, Alberta, Canada
- Grossreifling, Austria
- Ripley, British Columbia, Canada
- Passo della Morte, Italy



Academic staff Prof. Neil Dixon & Dr Gary Fowmes  
Research Fellow Dr Alister Smith

Loughborough University

**Project posters.** This poster was designed as one of a series to be displayed in the School of Civil and Building Engineering laboratories at Loughborough University. There was no need for a contact address due to its location so only the staff responsible for the project are given in the footer. The red colour scheme is suggestive of danger which reflects the nature of the project. This was produced at A1 with a strong title header so that it can be seen from a few metres away.

### Images and graphics

As a visual medium, posters can include a wide range of images, photos, illustrations, diagrams, graphs or drawings to provide or support the message. Finding the right image is an important step in the process. (See step 3 below.)

### Colour

Like text, lots of different colours on a poster can distract from your message rather than enhance it. A colour scheme should reflect the message or be used to draw the viewer in to take a closer look. Use colour for **visual impact** too.

Often, 'less is more'! Have this in mind when planning a colour scheme.

### Step 3: Finding the right imagery

The viewer needs to be able to understand the visual imagery you use on your poster. Even something as simple as a cross (✘) or a tick (✓) can be misunderstood. For example a ✘ may mean 'wrong' when used to mark coursework, but means 'right' when it is used to select a candidate on an election ballot paper.

Details can be misunderstood if the audience does not share the same 'visual language', as you or your designer. For example, engineering drawings have a language all of their own that non-engineers may not understand.

Images of people, particularly faces are always engaging. Using images of people

### Purposes of pictures

**Decoration** ~ simply to offer relief from the visual tedium of prose!

**Amusement** ~ to touch on the lighter side of the subject.

**Expression** ~ to convey an emotion or stimulate feelings about the subject.

**Persuasion** ~ to encourage viewer towards a change in practice or behaviour.

**Illustration** ~ superior form of decoration – where the picture enriches understanding of the text but is not strictly necessary to it.

**Description** ~ to show what something looks like ~ in a way words alone could not do.

**Explanation** ~ to show not just what something looks like but also how it works or how to operate it.

**Simplification** ~ to 'edit' reality by cutting out aspects that would confuse or distract the viewer.

**Quantification** ~ to represent different numbers and quantities with lines or areas of different sizes in graphs or charts.

**Problem-posing** ~ to act as a focus of questions, encouraging analysis and investigation.

Adapted from Rowntree, 1994.

with physical features similar to the people you are aiming your message at is more likely to engage them as they will see that the message is meant for people like them. Consider the age group of your audience and the style of clothing people wear, for example.

#### Step 4: Testing a draft

A poster is all about communicating a message. You or your designer will need to check with a sample of your audience to ensure that the message is being understood. Usually suggestions are invaluable to help you refine and refocus your message.

#### Step 5: Revising and finalising

When you receive feedback, try not to be too defensive about your original design, even if you think it is right as it is. Focus on comments that most members of the sample group make. You may need to reconsider other alternative options. Design can also be subjective, however, so not everyone will necessarily agree with you or others whose opinions you have sought.

#### Summary

Designing a poster requires a range of skills, as content, layout and visual aspects all contribute to your message having an impact on your viewers. Keeping the message and the visual aspects simple is often the route to success. A simple rule is to plan, do and review.

#### Reference

ROWNTREE, D. 1994. *Preparing materials for open, distance and flexible learning: an action guide for teachers and trainers*. London: Kogan Page in association with the Institute of Educational Technology, Open University.

#### Design tools


Whilst there are various computer programs that can be used to design a poster, it is often easier to make early drafts using large sheets of paper, pens, pencils, crayons, scissors, glue, pictures cut out of magazines that can be moved around.

It can take time to become proficient with design software so spend time on developing a good clear message rather than learning to use a complex program.

#### White space

Having too much information on the poster can make it confusing. Blank areas around an image or text can provide more emphasis than text forced into a tight space.

#### Some examples

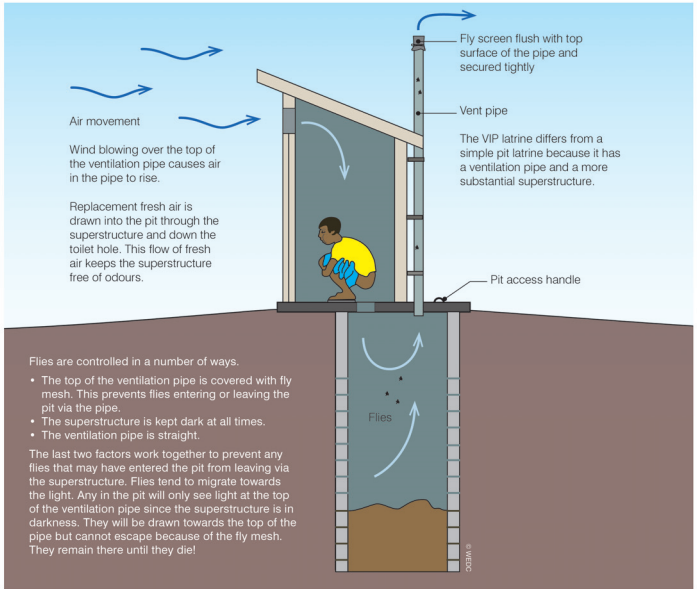


Developing  
knowledge and capacity  
in water and sanitation

**POSTER 15**

## Ventilated, improved pit latrines (VIP latrines)

**Solid materials such as newspaper, corn cobs, leaves, sticks or stones used for anal cleansing are not suitable for use with pour-flush toilets as the water seal is likely to become blocked or broken. However, the addition of a vent pipe to a simple pit latrine is an alternative way of reducing the nuisance of flies in the cubicle if the cubicle is kept clean. This type of latrine is called a ventilated, improved pit (VIP) latrine. There are a number of designs to suit different situations but they all work in much the same way.**




The diagram illustrates the airflow and fly control in a VIP latrine. Wind blowing over the top of the ventilation pipe causes air to rise. Replacement fresh air is drawn into the pit through the superstructure and down the toilet hole. This flow of fresh air keeps the superstructure free of odours. The VIP latrine differs from a simple pit latrine because it has a ventilation pipe and a more substantial superstructure. The top of the ventilation pipe is covered with fly mesh, secured tightly. The pit access handle is also shown.

Flies are controlled in a number of ways.

- The top of the ventilation pipe is covered with fly mesh. This prevents flies entering or leaving the pit via the pipe.
- The superstructure is kept dark at all times.
- The ventilation pipe is straight.

The last two factors work together to prevent any flies that may have entered the pit from leaving via the superstructure. Flies tend to migrate towards the light. Any in the pit will only see light at the top of the ventilation pipe since the superstructure is in darkness. They will be drawn towards the top of the pipe but cannot escape because of the fly mesh. They remain there until they die!

**For further information visit:**  
<http://wedc-knowledge.lboro.ac.uk/>



**Loughborough  
University**

**Informative posters.** This poster was designed to describe the features of a particular type of latrine. With a short introduction, most of the detail is best shown in the illustration.