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# An Introduction to the Web and Web Authoring

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A Physical Sciences Practice Guide

*Roger Gladwin*

*February 2006*

# **An Introduction to the Web and Web Authoring**

**Roger Gladwin**

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The views expressed in this practice guide are those of the author and do not necessarily reflect those of the Higher Education Academy Physical Sciences Centre.



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## **Preface**

The original idea for this guide was conceived by Roger Gladwin and Simone Richardson in 2001 and the first version was issued in January 2002. The web and the technology supporting it move quickly so an updated version of the guide is timely. This version has been updated by Roger Gladwin. The following is the original Preface...

*“Having successfully run a series of workshops entitled **Web Authoring for Beginners** we believe that there are still more people who would like access to the material that we presented on those occasions. So with this in mind we set about creating a practice guide that introduces the basic points regarding the world wide web and web authoring.*

*Since our intention was to produce a useful document for academics wishing to create web based material we have also included some pointers regarding the capabilities of the web, the main concerns to consider when using the web plus some guidance on using the web for teaching.*

*The content is largely based upon materials used in a series of workshops originally created by the CTI Centre for Chemistry and latterly run by the LTSN Physical Sciences Subject Centre.”*

**Roger Gladwin**  
University of Liverpool

February 2006



## **Introduction**

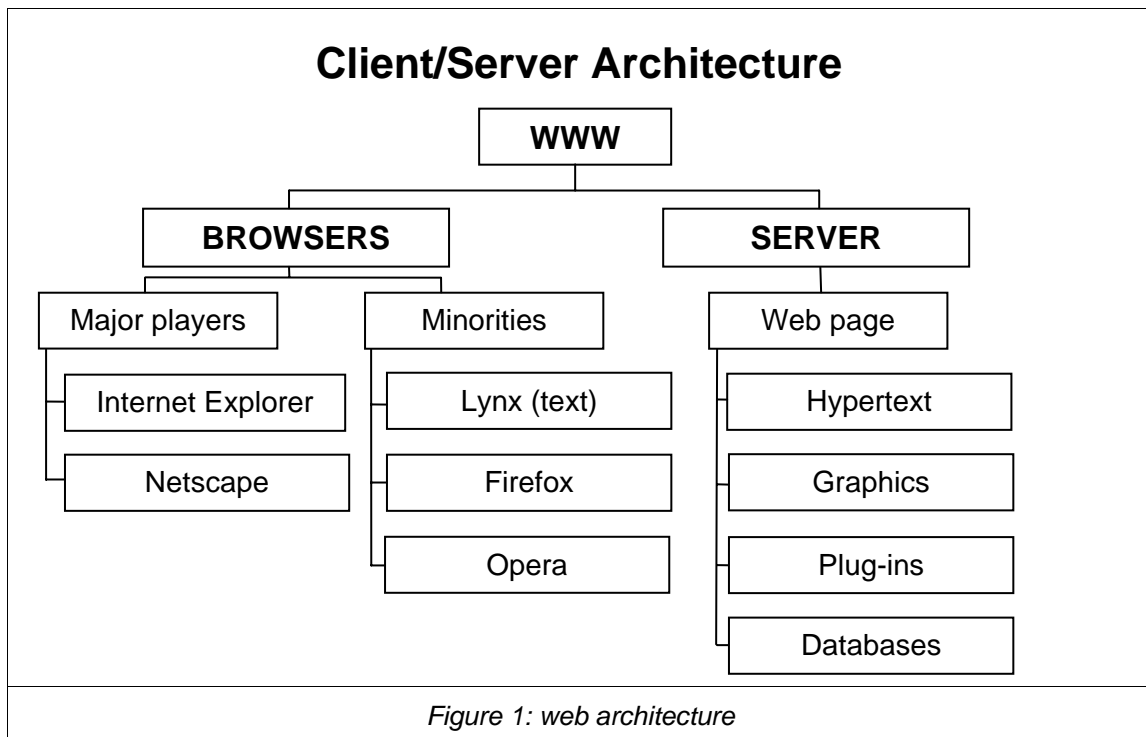
This document has been created to offer guidance to academics intending to incorporate the web as a resource in their courses or to prepare web based course materials. We have split the guide into several sections to make it easier for the reader to quickly access the information that they require.

Before embarking on using the web to produce course material it is important to first consider what is the web? Once that has been established it is a good time to look at what are its capabilities and what things should be of particular concern. This should put you in a good position to look at the different ways that the web can be used within teaching. Eventually you arrive at the point where you are ready to start creating web pages. By working through the basic constituents required to form a web page this naturally leads us to the main points to consider when planning and creating web pages, particularly in teaching.

## Components of the Web

So what is the web?

The World Wide Web is often referred to simply as 'the web' or WWW. In essence, the web allows the user to view information on the Internet (the overall network that connects a computer to other computers and networks) in a structured and graphical manner. It consists of two main components - a server and a browser (see figure 1). The information exists on a host computer running **web server software**, which allows other computers to access web documents or pages (these can contain text, hypertext, graphics, animation, sound, video and interaction) via a **web browser** on a client computer. Basic web pages are written using HyperText Mark-up Language (HTML).



To extend the capability of basic HTML, additional features are added via programs and incorporated as plug-ins. The two most common web browsers are **Netscape Navigator** and **Microsoft Internet Explorer** although many other web browsers exist.

## Capabilities and Concerns

In order to make an effective use of the web it is important to approach it like any new piece of software and find out in as much detail as possible about what it can be used to do. Also using some time to identify the areas in which the web is limited or restricted gives you the opportunity to remove, or take into account, any resulting problems.

### **Capabilities**

**Integrates resources** – When material is delivered via the web you are able to access a whole host of resources – including interactive databases, library catalogues, research centres, government agencies and publicly available courseware. Virtual/Managed Learning Environments exploit this capability.

**Cross Platform** - Students have access to the material whether they are sitting at home in front of their PC or in a university computer lab using a UNIX box. The web material is largely independent of platform.

**Multimedia** – You can incorporate sound, graphics and animation into your web pages. This has the potential to maintain students' interest and attention for longer, as well as providing a more versatile method for delivering material.

**On-line Feedback** - Examination and tutorial questions can be made available via the web with feedback to motivate students and encourage learning.

**Searching** – By the addition of links on a web site to available search engines students are able to access educational material across the whole web. Also there are customised search engines that allow students to search for specific subject material on the web.

### **Concerns**

**Internet Connection** - If a lecture depends on access to a particular web site a back up plan (eg screen shot, tutorial activity) is recommended so that connection failures do not cause a problem.

**Speed** – The time it takes to download from the web, particularly for a large amount of material may depend upon the time of day, how fast the servers are operating and the hardware being used.

**Security** - To reduce the possibility of unauthorised access to computers (viruses and hacking) it is better to use software with a high level of security e.g. Java and JavaScript.

**Quality & Volume** – In order not to waste time be selective about the material you recommend for students to access.

**Reliability of Information** – It is important that the web sites that students are referred to contain correct and legitimate information, so be very cautious and check your chosen sites thoroughly.

**Netscape vs Internet Explorer** - When choosing a web browser to use the first thing you consider is your operating system:

- Netscape is available for Unix and MS Windows and Apple Macintosh
- Internet Explorer is only available for MS Windows and Apple Macintosh

It is also important to realise that the appearance of a web page can be affected by the version of the browser, the window size and the screen resolution that students choose to use.

**Copyright & Liability** - Be careful. Is the material included on local web pages and gathered from other web sites, in breach of copyright? – if in doubt it is better to link to material rather than copy it. Also to reduce the risk of professional liability carefully check all material published on any web sites to which you refer students.

## **Uses in teaching**

### ***Lecture Notes***

This is the most basic way of supporting teaching – a place for students to access lecture notes.

The main advantages are:

- Reduction in the amount of departmental photocopying.
- Students can access notes prior to lecture and prepare.

If you only make available a summary of the lecture prior to the event and the complete lecture notes after a certain date you can hopefully counteract students accessing material in order not to attend the lecture.

### ***Presenting Lectures***

Displaying these lecture notes with the addition of simulations (e.g. Java Applets) can form the basis of an on-line lecture.

Two words of warning:

- Consider the amount of information being displayed and the way it is presented.
- The presentation is dependent on the reliability of the server unless the material is loaded on a local machine.

### ***On-line Courses***

The further addition of exercises and reference material can allow the creation of a complete on-line course. For the exercises to be effective there is a need to include a feedback mechanism.

### ***Interactive Experiments***

These can offer many benefits to both on-line courses and to support traditional courses. For example:

- The opportunity for students to gain experience at a 'low' cost in a safe environment.
- The means to repeatedly reinforce principles introduced in lectures.
- The means to gain data analysis skills.
- The improved preparation of students to undertake real practical work.

### ***Database Searching***

Students can use the web to search archives of data taken from the real world e.g. astronomical data from ground-based telescopes.

It is important to direct students to search engines that are suitable for the assignment. Different search engines compile information using different criteria and have access to different databases. The complicity of the interface should be an important consideration e.g. NASA Skyview.

### ***Examinations***

The web can be used to set practice questions, continuous assessment questions and even final examinations. These are usually in the form of Multiple Choice Questions but other formats (eg numeric, fill-in-the-blanks, essays) are also used. In all cases it can be advantageous if feedback is given via the system. However, most trials seem to indicate that students who get wrong answers prefer to then have further personal feedback from tutors.

## **Creating Web Materials**

### ***Tools***

There are a number of tools available for the creation of web pages (see figure 2). These range from simple text editors (eg Windows NotePad) where one needs to learn HTML coding, through HTML editors which generate the HTML code for you, to site management programs which not only facilitate the creation of pages but allow the administration of a whole site from a PC. Typically these latter programs allow many authors to work on the web pages, check links to external sites, facilitate the creation of navigation systems within web sites etc.

It is not necessary to pay for web authoring tools. Obviously within Windows, NotePad is available (if a bit basic for web authoring) and the current Netscape browser comes with Composer.

For site management then one generally has to pay. Microsoft's FrontPage and .NET technology, Macromedia's Dreamweaver and NetObjects's Fusion are all examples of this type of product. Additionally, many of today's web sites are created as Content Management Systems, where the content is driven by databases and cascading style sheets control the layout. The two 'parts' are developed as separate resources and brought together on request by the web server 'on the fly'. This type of web server is easier to maintain as for the most part only the data in the database needs updating.

Before moving on it is worth noting that for permanent (or nearly fixed) documents (eg lecture notes) then Adobe's Acrobat is also a notable consideration. This software allows the generation of PDF (portable document format) files simply by printing to the Adobe software from the original application. Once mounted on a web server any other user, with the freely available Adobe Reader plug-in, can read or print the document over the web.

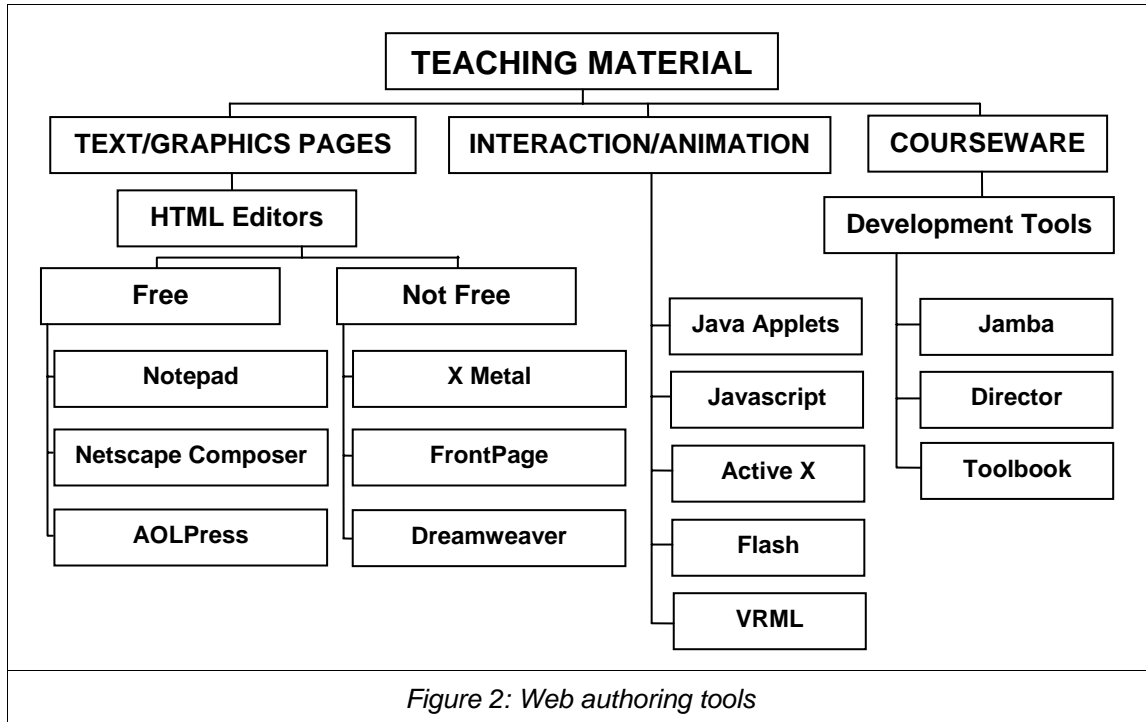


Figure 2: Web authoring tools

### The Authoring Process

Creating simple web pages with the current web authoring tools is not much more difficult than word-processing. There is little need to learn about HTML coding (although for those interested in this aspect many web authoring packages allow the exploration of this feature). Adding scientific content is also becoming easier as tools are developed to aid the process.

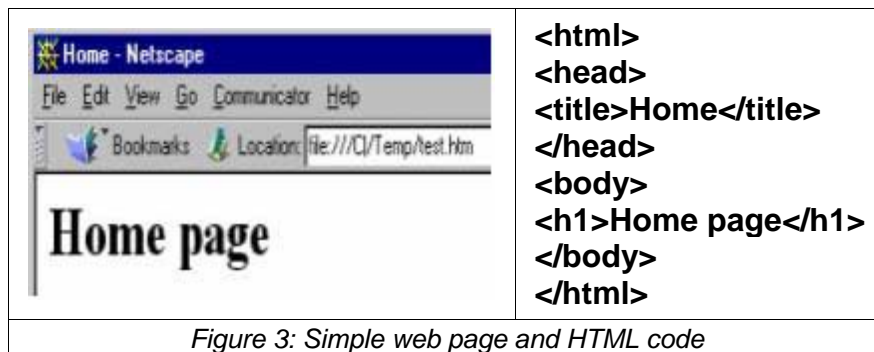
<b>header text</b> <b>body text</b> <b>hyperlinks</b> <b>lists</b> <b>tables</b> <b>forms</b>	<b>multimedia</b> <b>embedded commands</b> <b>backgrounds</b> <b>frames and borders</b> <b>themes and templates</b> <b>applets</b>
<i>Table 1: Elements of a web page</i>	

The elements of a web page vary from site to site and even from page to page within a site. However the web pages are likely to contain some or all of the items listed in table 1. Those listed in the left column of the table may be considered the more basic elements whilst those in the right column are more advanced (but still often simple to incorporate into web pages).

Figure 3 shows a section of a simple web page, with the corresponding HTML code to generate the page in a web browser. Although it is not normally necessary to learn HTML it is useful to have an idea of how HTML code works. Thus an examination of the individual items (or tags) of the code for the example in figure 3 is useful.

The `<html>` tag simply denotes that this is the start of the HTML coding. *It is now generally accepted that 'best practice' requires the use of lower case characters for HTML tags.* At the end of the code `</html>` is used to denote the end of HTML coding. In general, but not always, there is a 'starting' and 'ending' tag for each HTML element.

Next is `<head>` which starts the header information for the page. The header information in this case is simply the title of the page. The title information appears in the title bar of the program (see figure 3). The header may also contain other information such as the program name for the web authoring package used to generate the HTML code.



The title for this page is contained within the `<title>` and `</title>` tags. This line is followed by the tag `</head>` to close the header information.

Next is the main part of the document to place on the web page. This information is placed between the 'start' and 'end' tags `<body>` and `</body>`. In this case there is only one line of text. This is contained within more tags, `<h1>` and `</h1>`, which denote that the text is to be represented as a heading type 1 (a large font in bold format) and this is shown in figure 3.

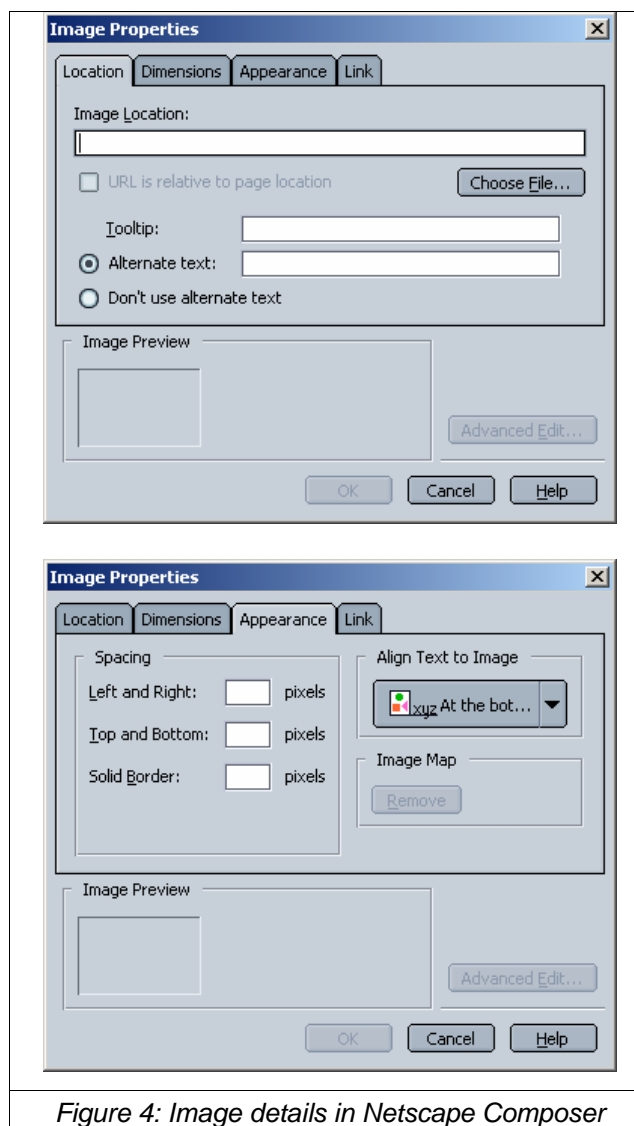


Figure 4: Image details in Netscape Composer

Creating web pages using a web authoring package is relatively straightforward. Text, tables, graphics, animations, videos, sounds and science can all be added. Alternatively materials in existing documents (eg word-processor files) can be imported using cut/copy and paste or through import facilities within the web authoring package.

For the most part adding content is just like word-processing even if using some of the free tools. One can enter text, insert graphics and tables simply by using the standard tools within the editor (see figure 4). Be careful though, it is possible to add animations, video and sounds directly by insertion using standard tools but these additions might work fine in (say) Microsoft Internet Explorer but it is wise to confirm they work too in other browsers (eg Netscape Navigator) if there is a need to ensure cross platform compatibility.

In most cases, scientific information (eg molecular views) may need to be *embedded* with HTML code but this is relatively simple once one learns a few basic rules (see figure 5).

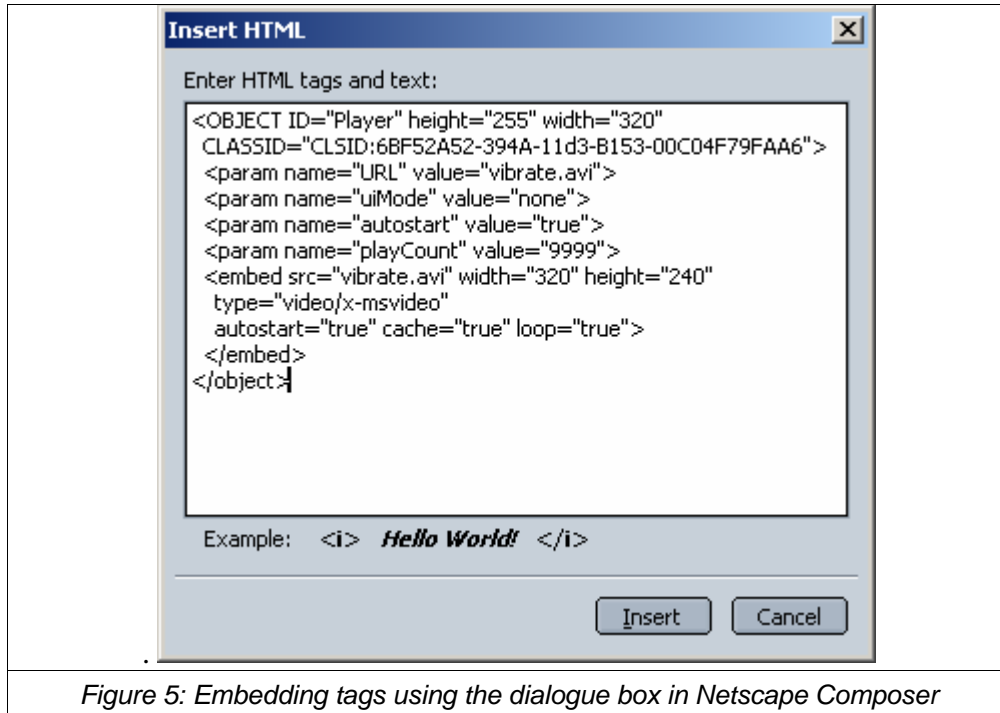


Figure 5: Embedding tags using the dialogue box in Netscape Composer

## Hyperlinks

Hyperlinks are what give web pages the user-orientated focus. They allow each user to browse where they please, when they please. Hyperlinks may be created to other pages within a web, to specific places within a web page and to pages on other web sites. The links are normally generated from 'hot' text or from 'hot' graphics. Links within a web are usually created using paths which are relative to where the user is now rather than as absolute addresses. This has the advantage that when the content of a web site is moved (eg from a PC where it is developed to a server for worldwide access) the links remain valid. Links to other web sites normally need to be absolute.

## Validation

Once web pages have been created they need to be checked to ensure that they work! Most of the modern web authoring software validates code during the editing process so there is little chance of having errors in the code. Unfortunately though not all browsers are equal! Some implementations of HTML work only on specific browsers. Thus it is necessary to check the web pages on several browsers and several versions of each browser, with several settings of screen resolution and colour settings. One also needs to check regularly for broken links (particularly to addresses on other web sites).

## **Accessibility**

For web accessibility, the emphasis is on disability access. There are 3 levels of priority: level 1 (must do) eg providing alternative text for images for those who use a text-based browser, level 2 (should do) eg ensuring legibility of text through appropriate choice of foreground/background colours, level 3 (might do) eg including summary/caption for tables for improved clarity of information presentation.

Notes:

- **Bobby** is a program which allows one to assess a web site with regard to web accessibility. This program is no longer free to download but individual web pages may be assessed at no cost on the **Bobby** site (see Appendix 2).
- For more information on web accessibility visit the **TechDis** web site (see Appendix 2)

## **Publishing**

The finished web site needs to be ‘published’. The web site may reside on a local PC and that computer can be set up as a server. However, most authors prefer to ‘post’ their webs on a dedicated server. Some software contains the facility to ‘publish’ the web by posting the documents to the server. If not an ftp client program will be required (see Appendix 2).

## **Styles**

Everyone likes to develop their own style for their own web pages. However, some guidelines are worth considering:

- Be consistent
- White space and simple graphics makes reading and navigation easier
- Use small images for speed
- Colour combinations can cause problems
- Some applets are browser specific
- Don’t overdo animations/scrolling text etc
- Some text attributes can be irritating (eg blinking)

Don’t forget! If users are hampered when trying to find the information they seek or if they experience navigation problems they are likely to give up.

Cascading style sheets are an excellent means of maintaining a consistent style across a website but are beyond the scope of this guide. However see the Appendix 2 for some further reading on this subject.

## **Appendix 1 - Other Tools & Technologies For Web Authoring**

### ***Courseware Development Tools***

A courseware development tool (eg **ToolBook**) may be a useful extension to web authoring. Such tools focus particularly on developing courseware using extra templates, simple to use menus and autoscripts. They are also able to manage the references & links and control most of the process for producing a web site on the server.

### ***Associated Tools/Technologies***

#### **Image Map**

- An image containing hypertext links (hotspots)
- Image map editors/web authoring tools simplify the process
- Incorporated in some web site managers e.g. Microsoft FrontPage

#### **Animations (e.g. animated GIF)**

- Need software (e.g. Whirlgif for Unix, MS Gif Animator for PCs) to create them
- Treated as any other image

#### **JavaScript**

- Scripting language for browsers
- Developed by Netscape (LiveScript)
- Nothing to do with Java
- Typically used for dynamic formatting & animated buttons
- Can be used to create simple applications
- High level of security

#### **Java**

- Programming language
- Developed by Sun Microsystems
- Cross platform language
- High level of security
- Applets (applications that need a browser)
- Can be used to create the most complicated of applications

### **ActiveX**

- A Microsoft standard for plug-ins
- Only works with Microsoft Windows
- Minimal security features
- Runs directly on your machine
- Allows a lot of flexibility for people creating the plug-ins
- Not very useful for most web authors

### **Virtual Reality (VRML)**

- Method of delivering 3D rendered scenes
- Allows viewer to move through scene
- Supports local hardware 3D graphics acceleration
- Not very widely supported
- VRML plug-ins can be very unreliable

### **Portable Document Format (PDF)**

- Alternative way of delivering documents over the web
- Guarantees format necessary for printing
- More compact delivery method
- Requires acrobat reader for viewing
- Requires acrobat writer for creation

## Appendix 2 - Some Useful Web Sites

Note: These addresses were last checked 10<sup>th</sup> January 2006

### Design, development, style

#### Beginners guide to HTML

[www.ncsa.uiuc.edu/General/Internet/WWW/](http://www.ncsa.uiuc.edu/General/Internet/WWW/)

#### Professional web design tutorial

[www.pagetutor.com/index.html](http://www.pagetutor.com/index.html)

#### Site accessibility

[www.anybrowser.org/](http://www.anybrowser.org/)

**TechDis**, the service aimed at enhancing access, through technology, to learning and teaching, research and administration activities for students and staff with disabilities in further and higher education. [www.techdis.ac.uk](http://www.techdis.ac.uk)

**Bobby** - the web site validator for disability access and browser compatibility

[www.cast.org/](http://www.cast.org/)

#### W3C's WAI Web Content Authoring Guidelines

[www.w3.org/TR/WAI-WebCONTENT/](http://www.w3.org/TR/WAI-WebCONTENT/)

#### Web developer's resource

[hotwired.lycos.com/webmonkey](http://hotwired.lycos.com/webmonkey)

#### Adding movies to your web page

[www.oreillynet.com/pub/a/javascript/excerpt/learnwebdesign\\_chap22/](http://www.oreillynet.com/pub/a/javascript/excerpt/learnwebdesign_chap22/)

#### Using the Windows Media Player Control in a Web Page

[msdn.microsoft.com/library/default.asp?url=/library/en-us/wmplay10/mmp\\_sdk/usingwindowsmediaplayerwithnetscapenavigator.asp](http://msdn.microsoft.com/library/default.asp?url=/library/en-us/wmplay10/mmp_sdk/usingwindowsmediaplayerwithnetscapenavigator.asp)

#### Embedding Windows Media and QuickTime Video on a Web Page

[www.kathymarks.com/archives/2005/09/embedding\\_windows\\_media\\_and\\_quicktime\\_video\\_on\\_a\\_web\\_page.html](http://www.kathymarks.com/archives/2005/09/embedding_windows_media_and_quicktime_video_on_a_web_page.html)

#### Embedding Windows Media Player

[www.mioplanet.com/rsc/embed\\_mediaplayer.htm](http://www.mioplanet.com/rsc/embed_mediaplayer.htm)

#### The Top Ten mistakes of web design

[www.useit.com/alertbox/9605.html](http://www.useit.com/alertbox/9605.html)

#### The Top Ten new mistakes of web design

[www.useit.com/alertbox/990530.html](http://www.useit.com/alertbox/990530.html)

#### Ten good deeds in web design

[www.useit.com/alertbox/991003.html](http://www.useit.com/alertbox/991003.html)

### Tools

#### Home site for an ftp client

[www.ipswitch.com](http://www.ipswitch.com)

#### HTML Validation

[www.htmlvalidator.com](http://www.htmlvalidator.com)

#### Windows Media Player

[www.microsoft.com/windows/windowsmedia/mp10/default.aspx](http://www.microsoft.com/windows/windowsmedia/mp10/default.aspx)

**Apple QuickTime plug-in**

[www.apple.com/quicktime/](http://www.apple.com/quicktime/)

**Apple QuickTime embedding reference**

[www.apple.com/quicktime/tutorials/embed.html](http://www.apple.com/quicktime/tutorials/embed.html)

**Chime home site for plug-in and tutorials**

[www.mdli.com/support/chime/chimefree.htm](http://www.mdli.com/support/chime/chimefree.htm)

**Site for RASMOL (CHIME) resources (including .pdb files)**

[www.umass.edu/microbio/rasmol](http://www.umass.edu/microbio/rasmol)

**Bersoft Word HTML Clean up**

[bersoft.com/bwhcu](http://bersoft.com/bwhcu)

**Easy Text to HTML Converter**

[www.easyhtools.com](http://www.easyhtools.com)

**Arachnophilia** (a web editor plus other facilities)

[www.arachnoid.com/arachnophilia](http://www.arachnoid.com/arachnophilia)

**IRun** (RTF to HTML converter)

[www.pilotld.com/eng/index.html](http://www.pilotld.com/eng/index.html)

**PaperlessPrinter** (converts document formats, including production of html)

[www.rarefind.com/paperlessprinter/](http://www.rarefind.com/paperlessprinter/)

## Reviews

**Reviews of reference guides to Internet**

[www.mantex.co.uk/reviews/biblios/art-web.htm](http://www.mantex.co.uk/reviews/biblios/art-web.htm)

**Review of Teach yourself web publishing with HTML 4 in 21 days**

[www.mantex.co.uk/reviews/lemay.htm](http://www.mantex.co.uk/reviews/lemay.htm)

**Review of Creating cool HTML 4 web pages**

[www.mantex.co.uk/reviews/taylor2.htm](http://www.mantex.co.uk/reviews/taylor2.htm)

## Tutorials

[www.pageresource.com](http://www.pageresource.com)

[www.webknowhow.net](http://www.webknowhow.net)

[www.htmlgoodies.com/](http://www.htmlgoodies.com/)

## Cascading style sheets

**Starting with HTML + CSS**

[www.w3.org/Style/Examples/011/firstcss](http://www.w3.org/Style/Examples/011/firstcss)

**Webmonkey's style sheet tutorials**

[www.hotwired.com/webmonkey/authoring/stylesheets/tutorials/tutorial1.html](http://www.hotwired.com/webmonkey/authoring/stylesheets/tutorials/tutorial1.html)

**The Web Design Group tutorials**

[www.htmlhelp.com/reference/css/](http://www.htmlhelp.com/reference/css/)

**Cascading Style Sheets for Dummies** by Damon Dean, Publ. Hungry Minds Inc  
(ISBN 0-7645-0871-7) 2001

**TopStyle Lite** (free download)

[www.bradsoft.com/download/index.asp](http://www.bradsoft.com/download/index.asp)

**StyleMaster** (free download – 30 day limit)

[www.westciv.com/westciv/downloads.html](http://www.westciv.com/westciv/downloads.html)

**Some web development products**

<b>Product</b>	<b>Web address</b>
Adobe GoLive	<a href="http://www.adobe.com">www.adobe.com</a>
Macromedia Coldfusion	<a href="http://www.macromedia.com">www.macromedia.com</a>
Macromedia HomeSite	<a href="http://www.macromedia.com/software/homesite">www.macromedia.com/software/homesite</a>
Claris Home Page	<a href="http://www.claris.com">www.claris.com</a>
Macromedia Dreamweaver	<a href="http://www.macromedia.com">www.macromedia.com</a>
Web Page Construction Kit	<a href="http://www.macmillansoftware.com/">www.macmillansoftware.com/</a>
MS FrontPage	<a href="http://www.microsoft.com/uk/default.asp">www.microsoft.com/uk/default.asp</a>
NetObjects Fusion	<a href="http://www.netobjects.com">www.netobjects.com</a>
SoftQuad Xmetal Pro	<a href="http://www.xmetal.com">www.xmetal.com</a>
Netscape Composer <sup>1</sup>	<a href="http://www.netscape.com/download">www.netscape.com/download</a>
HTML-Kit <sup>2</sup>	<a href="http://www.chami.com/html-kit/">www.chami.com/html-kit/</a>

- 
1. Part of Netscape Communicator – free
  2. Free

## Appendix 3 - Authoring Exercises

### Introduction

These exercises are designed to familiarise you with some of the techniques used in creating web pages. The exercises are based upon those used in a series of workshops run by LTSN Physical Sciences. Although written to create a small chemistry web, the content is immaterial. It is the practice which is important!

There are opportunities to create tagged text, to import documents - including graphics created elsewhere, to create links within documents and to other documents, to add backgrounds to pages, to embed more complex commands, to add animations and video files and to add chemistry content (as animated molecular views) to web pages.

To try out these exercises you will need a PC running Windows 2000 or later with a web browser (other systems may work but have not been tested) and you will need to download the file **web.zip** from our server at...

[www.physsci.heacademy.ac.uk/Resources/Downloads.aspx](http://www.physsci.heacademy.ac.uk/Resources/Downloads.aspx)

This file contains a number of pre-prepared files to save you time plus electronic versions of Appendix 2 in WEBSITES.HTM and this file in WSCRIPT.DOC.

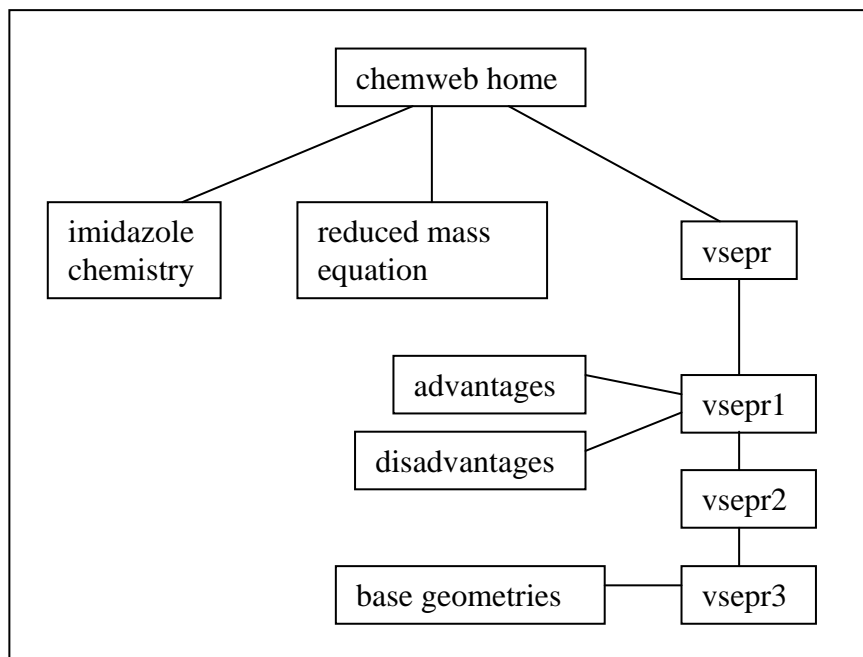
Copy the file **web.zip** to a convenient directory (eg **c:\webwshop**) on the PC you are using and from Explorer double-click on the file to expand the archive (you may need a file de-compression program such as winzip – available, free to try, from [www.winzip.com](http://www.winzip.com).)

MS Windows NotePad and Netscape Composer (version 7.2) are suggested as tools in these exercises as they are freely available. In addition Netscape Composer allows you to easily preview web pages to check layout and functionality. You will also need a word-processor to convert some Word files from .doc format to .html format. Your computer should have Windows Media Player installed and the Chemscape Chime and Apple QuickTime plug-ins installed (addresses for downloading these are given in Appendix 2). The c-cubed font (included in the web.zip archive - check Windows help for installation details) is used in the *mass equation* exercise. If you do not wish to install the font the exercise will still work but some characters may look strange!

The exercises have been tested on Windows PCs running Windows XP/2000. Browsers tested include: Netscape v4.x, v7.x and 8.x; Firefox v1.5 and Internet Explorer v6. For some of the animations used in these exercises, browser security settings may result in warning messages concerning the display of active content. In these cases it is safe to view the content.

This exercise was programmed for ca. 3-4 hours during the workshops.

The structure of the proposed web site is...



Notes:

1. When saving HTML files you can either use the **.htm** or **.html** extension (we have used the former and these instructions reflect this).
2. The exercises have been trialled using MS Word versions 2000, XP and 2003. The latter two versions have a built-in filter to remove most of the MS data used to allow a 'round-trip' between .html format and .doc format. We are not intending to return to .doc format so these exercises use the filtered html saving options with a resultant saving in file size and reduced complexity of the source file. For MS Word 2000 you will need to download the MS filter tool from <http://office.microsoft.com/downloads/2000/msohtml2.aspx> - once downloaded double-click on the self-extracting file msohtml2.exe to create the filter option (Export to Compact HTML) when saving in MS Word 2000. The MS Word 2000 filter is more configurable than those present in the later versions of MS Word and can produce 'cleaner' .html files. Unfortunately, you cannot install this filter unless you have some components of MSWord 2000 installed on your computer. However, if you do wish to use the MS Word 2000 filter on systems with the later versions of MSWord you need firstly to download and install the filter on a machine with MS Word 2000, then copy the files, filter.exe (from the 'Windows' directory), MSFilter.dll (from the 'Windows\System' directory) and MSFilter.exe (from the 'Program Files\Microsoft Office\Office' directory) to a convenient directory (eg 'Program Files\Microsoft Office\Office\Filters') and create a shortcut to the program 'msfilter.exe' on the desktop (or other convenient location). The MS Word 2000 filter can be used from within MS Word 2000 or as a standalone program (this is essential if you are using a PC with XP or 2003 versions of MS Word) from the shortcut to MSFilter.exe and is configurable.

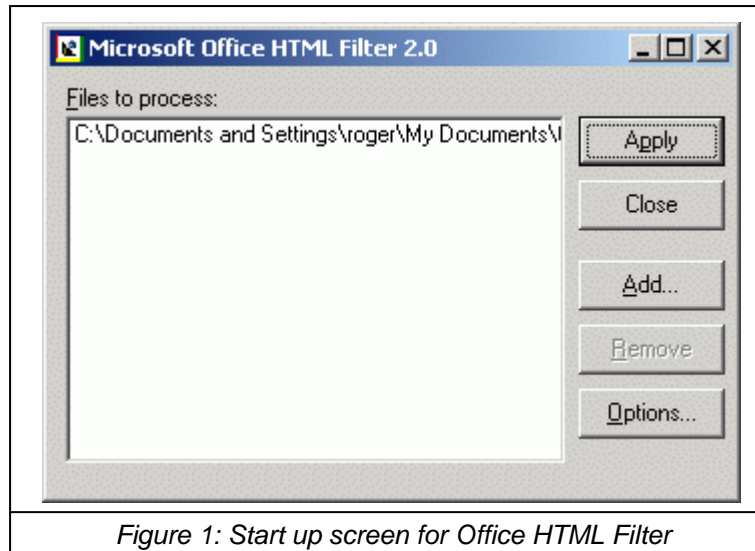


Figure 1: Start up screen for Office HTML Filter

Here are some results of saving files. An example file, saved as (unfiltered) html from MS Word 2000 was 24KB; using the filter with standard settings gave a file size of 12KB; adding filters to remove LANG attributes, non-essential Meta tags and all Style elements further reduced the file size to 11KB; finally to also add delete non-essential linked files and remove standard CSS brought the file size to 7KB.

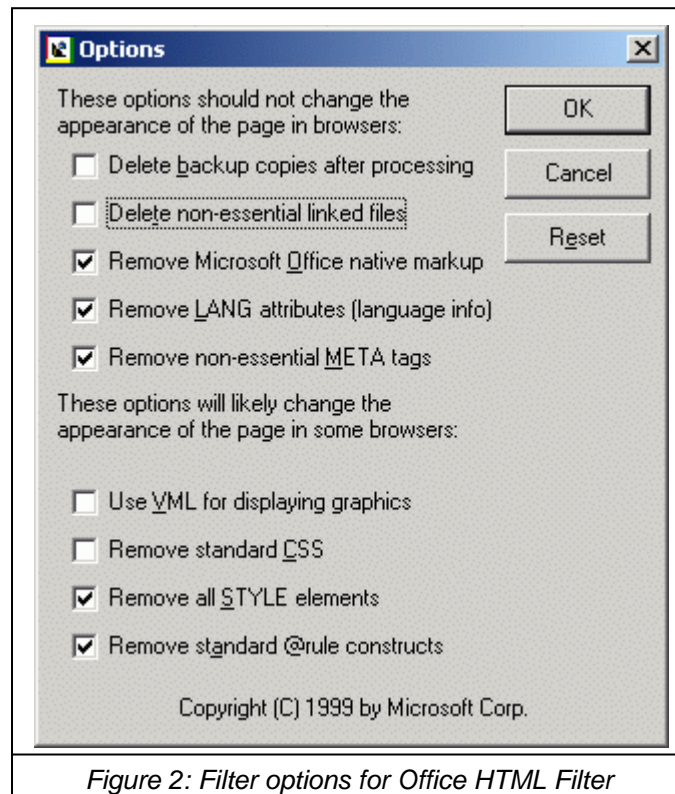


Figure 2: Filter options for Office HTML Filter

You will need to decide how ‘filtered’ you want your files but for the exercises (where we used MS Word 2000) we have opted to use the standard filtering plus remove LANG attributes, non-essential Meta tags and all Style elements.

3. We have used the following options in all versions of MS Word. Select menu option Tools/Options/Web Options. Under General (for Word 2000) or Browsers (for Word XP/2003) select the browser type Microsoft Internet Explorer 4.0 and Netscape Navigator 4.0 and check the tick boxes to disable features not supported by those browsers and to rely upon CSS for font formatting.

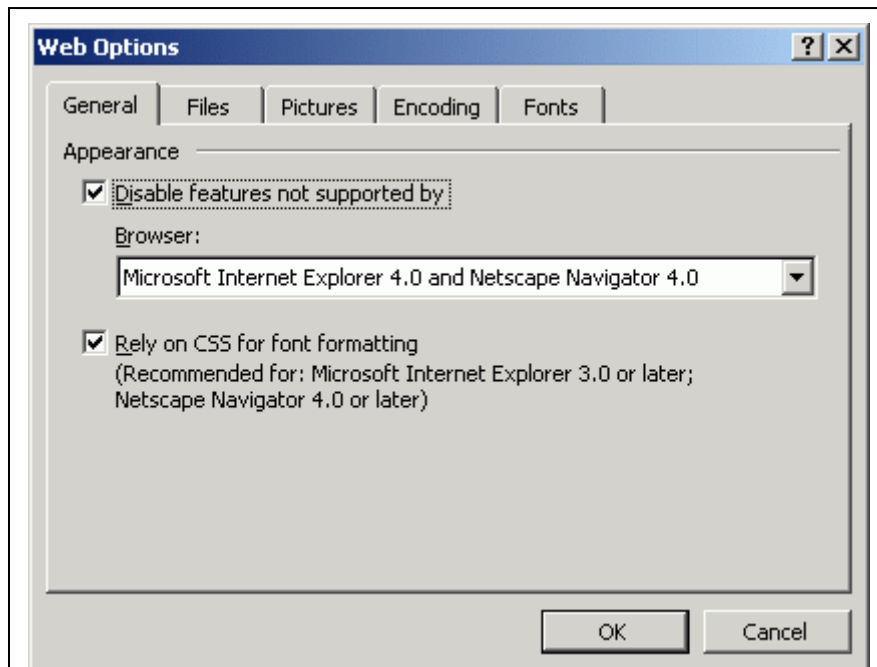


Figure 3: Web options settings for MS Word 2000

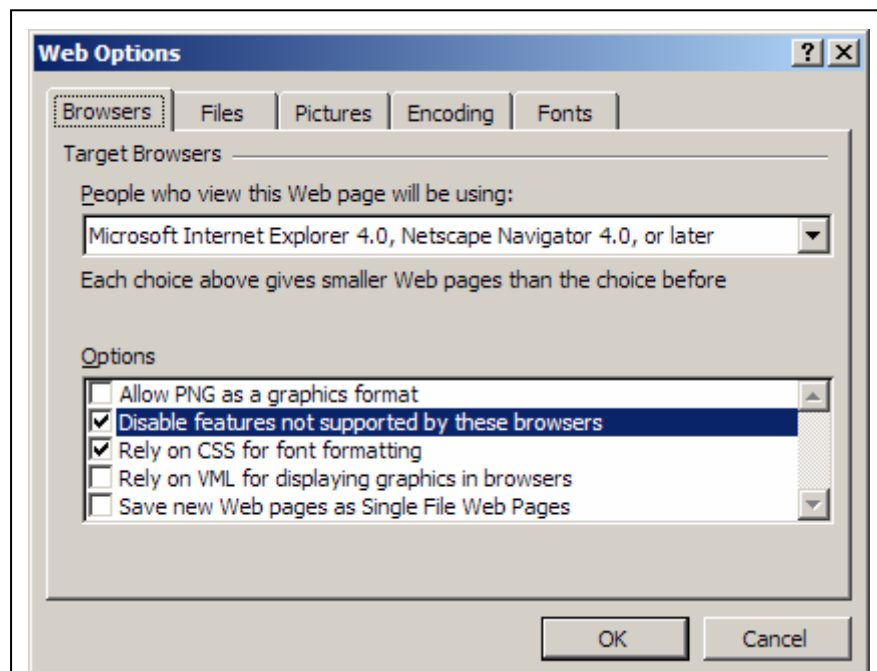


Figure 4: Web options settings for MS Word XP/2003

4. When saving to .html format, you may get a warning message (eg raised text will become superscript and lowered text will become subscript) which may be ignored (ie click *Continue*).
5. If you save documents which include graphics, MS Word places the image files into their own sub-directory, with the name *filename\_files* (eg in section 3, *imidazol\_files*). In some cases the quality of the images is degraded by this process. To avoid this in exercise 3 we will be using text files and separate graphics files which will be inserted into the web pages and in exercise 4 we will use a combined text/graphics file but look at a workaround to improve image quality.

### Exercise 1. Create the home page

In this first exercise you will use a simple text editor to create some tagged text.

Use *MS Notepad* to create...

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN">
<html>
<head>
<meta http-equiv=Content-Type content="text/html; charset=windows-1252">
<title>Chemistry Web</title>
</head>
<body>
<h1>Chemistry Web</h1>
<p><a href="imidazol.htm">Imidazole</a></p>
<p><a href="mass.htm">Reduced Mass Equation</a></p>
<p><a href="vsepr.htm">VSEPR</a></p>
</body>
</html>
```

Save as *chemweb.htm* in directory *c:\webwshop* (all files should be saved here). Use the *Save As* command from the *File* menu and make sure that the *Save As type* option is set to *All Files*. *Exit* Notepad

The tags used here are...

<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"> denotes the type of HTML coding the browser should expect. In this case we are using HTML 4.01 Transitional coding to cope with poor browser compatibility with some cascading style sheet commands.

<html> denotes the start of html coding

<head> creates the header for the document

<meta http-equiv=Content-Type content="text/html; charset=windows-1252"> this is meta-data and denotes the type of content the browser should expect

<title> starts the title field for the document – this appears in the program header bar when the page is called by a browser

</title> denotes the end of the title field.

In general (but not always) start tags are matched by end tags as in this case <title></title>

</head> marks the end of the header

<body> starts the main part of the document

<h1></h1> any text between these tags is denoted as header type 1 text

<p></p> is the paragraph tag set and can be used to create 'white space'

The next 3 lines are links (also called anchors) to other pages (imidazol.htm, mass.htm and vsepr.htm) or Universal Resource Locators (URLs). You only have to give the page names and no other descriptors as the pages are local.

<a href="imidazol.htm"> denotes where to link to

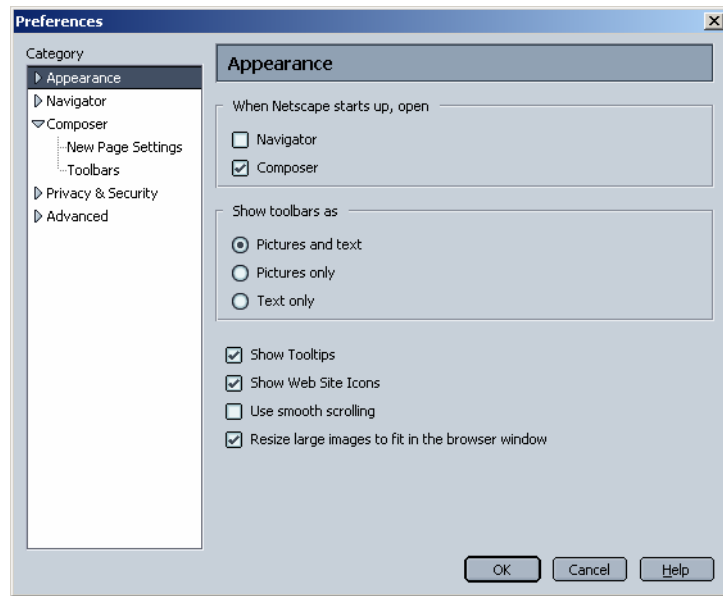
Imidazole</a> designates the word Imidazole as the link text (appears in colour and underlined on the web page) and ends the anchor field.

</body> closes the body of the document

</html> closes the html coding

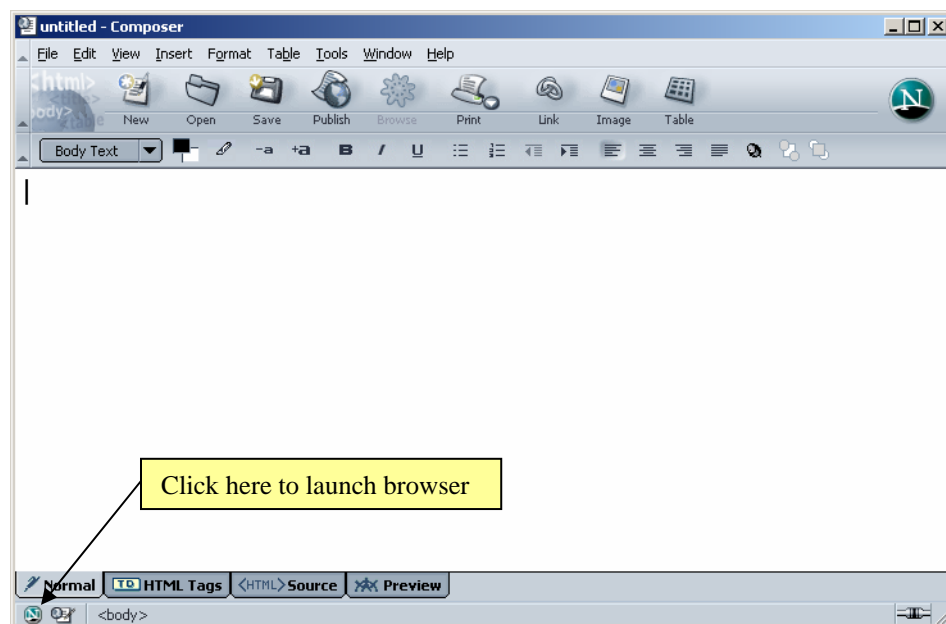
*It is generally accepted 'best practice' to use lower case characters for HTML tags. With modern HTML Editors it is generally not necessary to create web pages using html tags - the program does it for you!*

The instructions following suggest the use of Netscape Composer. To start Netscape in Composer mode open the browser as usual then use Menu item, **Edit/Preferences/Appearance** and set 'When Netscape starts up, open' - Composer (as in figure 1 below).



*Figure 1: Opening Netscape as Composer*

To view the saved files in Netscape browser, click on the icon at the bottom left hand side of the Composer screen (as in figure 2 below)



*Figure 2: Opening Netscape browser*

## Exercise 2. Edit the home page

In this exercise you will open the .htm file created previously, change the appearance of the page, experiment with inserting tiled images into the page background, format text and create an indented bulleted list.

Run *Netscape Composer* and open the file *chemweb.htm* that you just saved. Choose *Format/ Page Colors and Background* from the menu items). Select the *Use custom colors* and click on the Background box and choose a background colour - click *OK* - the preview box shows what the effect will be - when satisfied close the box by clicking *OK*. You could also see the effect of using a background image. Go back into *Page Colors and Background* and in the background image box select the file *so2.gif* from directory *c:\webwshop* (all the files you need should be located in this directory). Click *OK*. You may like to undo this - go back into *Page Colors and Background* and delete the reference to the file *so2.gif*. Now you will change the text formatting on the page title.

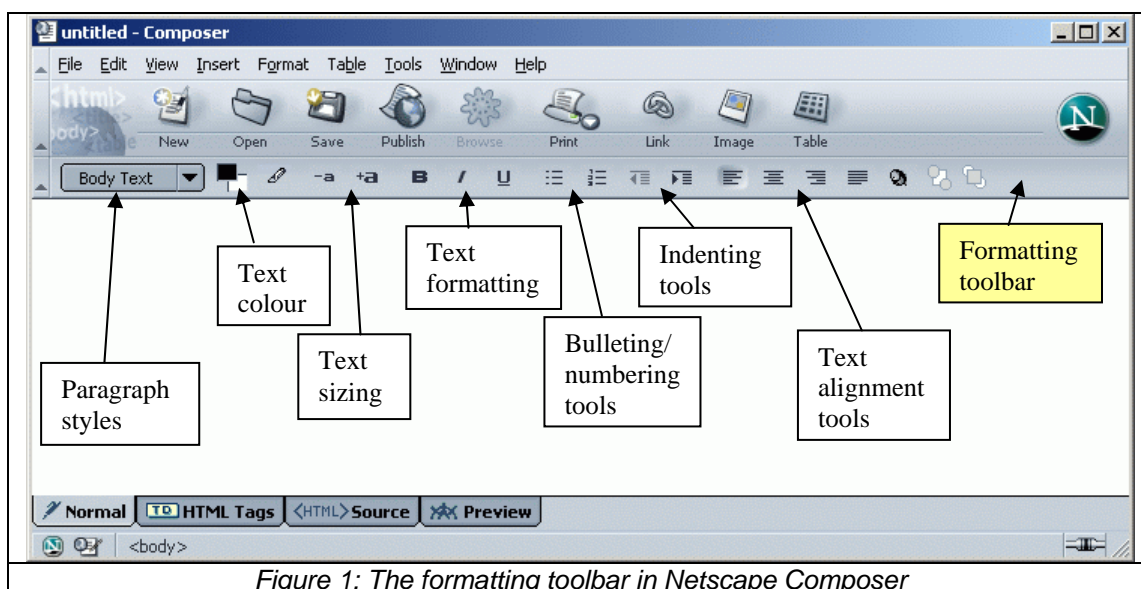


Figure 1: The formatting toolbar in Netscape Composer

Select the text *Chemistry Web* and from the formatting toolbar select the *Choose color for text* toolbar item (see figure 1) by clicking on the icon and choose a deep blue colour. With the text still selected choose the *Italic* text icon from the toolbar to change the heading style. Now select the three linked items – *Imidazole*, *Reduced Mass Equation* and *VSEPR* - and change them from *Normal* text to a *List Item*, using *Apply or remove bulleted list* on the text formatting toolbar. Next while still selected increase the indentation of these items (use the *Indenting tool* on the formatting toolbar) until the text is about one inch from the left-hand edge of the window. Click *File/ Save* then *Close* the file.

### Exercise 3. Create the Imidazole Chemistry page

For this exercise the source file is *imidazol.doc*. Next the technique of creating links within a document (targets) and cut/paste will be practised.

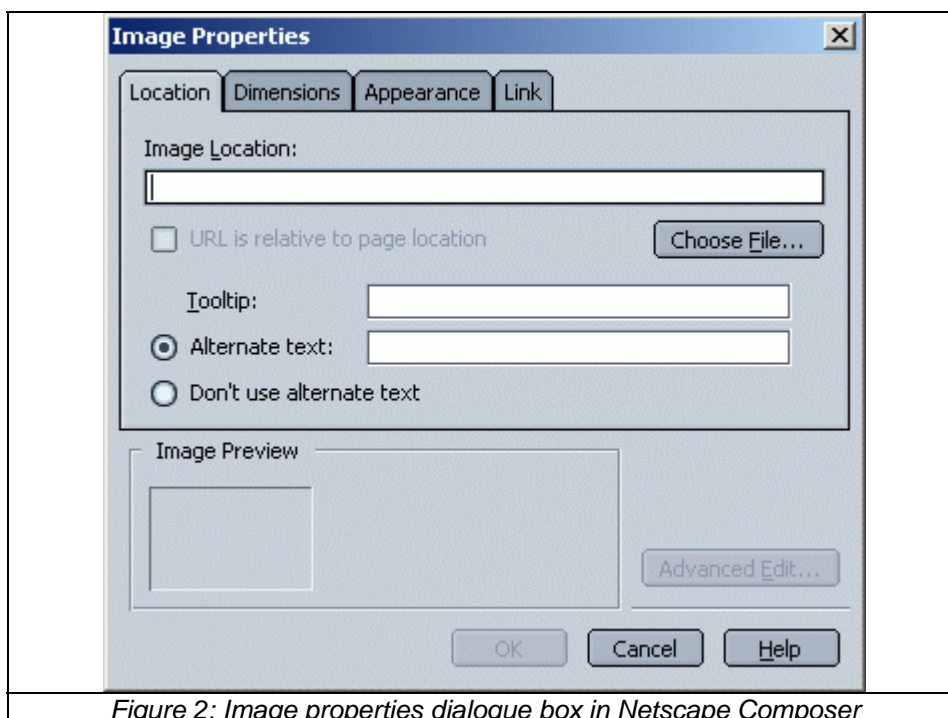


Figure 2: Image properties dialogue box in Netscape Composer

Open the file using your word-processor then use **File/ Save As** (or Export to Compact HTML in MS Word 2000) to convert the file to *imidazol.htm*. Ensure the **Save as type** option is set to Web page, filtered (if your word-processor has been set up for web work you may have the **File/Save as HTML** option in the **File** menu list – DO NOT USE this option as the resultant file is not filtered). **Exit MS Word**.

Open *imidazol.htm* in **Netscape Composer**. After the second paragraph we are going to insert an image. Move the insertion point to the space between paragraph 2 and 3 and on the menu bar click Insert/Image (or click on the Image icon on the toolbar). Use the Choose File option to select the image (in this case the file name is imidaz1.gif) then move to the **Tooltip** box and enter a description (eg *Figure 1: Structures of Imidazole and some of its derivatives*) - for older browsers also click in the **Alternate text** box and enter the same description. Click **OK** to leave the dialogue box. The tooltip/alternative text will appear in the web page if the browser does not support graphics or if the mouse is passed over the image (*you should include an **Tooltip/Alternate text** description for all graphics*). Figure 2 shows the Image Properties dialogue box. Similarly insert the other images into the text. Place imidaz2.gif after paragraph 3, imidaz3.gif after paragraph 4, imidaz4.gif after paragraph 5, imidaz5.gif after paragraph 6, imidaz6.gif after paragraph 7 (remember to include a **Tooltip/Alternative text** description for each).

Now you will create some anchors - these are links within a document. Move to the bottom of the text and double click on the title **Summary** to highlight it. Select from the menu Insert/Named Anchor and accept the name **Summary** for this target. Click **OK**. The original text now has an anchor icon associated with it. Move to the top of the document and create some space (place the insertion point before the first paragraph and hit the **Return/Enter** key a couple of times). Place the insertion point in the blank area and type **Summary** and then select that text. Click the **Link** icon on the toolbar, click on the down arrow and select the anchor **Summary** in the list presented in the Link Location box. Notice the link is designated **#Summary** (this is how an anchor is designated in html code). Click **OK**. The text you typed is now highlighted and underlined and links to the title **Summary** at the bottom of the document. To try it out **Save** the file, click **Browse** on the toolbar then click on the linked text **Summary**. Click **File/ Close Window** to return to edit mode.

The screenshot shows a web authoring software window titled "7: Imidazole [file:../IMIDAZOL.htm] - Composer". The interface includes a menu bar (File, Edit, View, Insert, Format, Table, Tools, Window, Help) and a toolbar with icons for New, Open, Save, Publish, Browse, Print, Link, Image, and Table. The main text area contains a paragraph: "Azoles with three or four nitrogen atoms in the ring exist as stable compounds. As the number of heteroatoms in the five membered ring increases, the ring system becomes less basic and the NH protons become more acidic. Electrophilic substitution reactions become increasingly difficult and nucleophilic substitutions become easier. This is illustrated by some reactions of tetrazoles in which nucleophilic substitutions occur readily. Tetrazoles are important in medicinal chemistry because they are about the same size and shape as carboxylic acids and have similar pK values: they can therefore be used as analogues of biologically active carboxylic acids." Below the text is a chemical comparison diagram. It shows two rows of chemical structures. The top row shows two resonance structures of a tetrazole ring with an R group, connected by a double-headed arrow. The bottom row shows two resonance structures of a carboxylate group (R-C(=O)O<sup>-</sup>), also connected by a double-headed arrow. The word "compare" is written to the left of the bottom row. At the bottom of the window, there are tabs for "Normal", "HTML Tags", "Source", and "Preview", and a status bar showing HTML tags: "<body> <div> <p> <span>".

Figure 3: The text Azoles as an anchor in file imidazol.htm

You can also create links using cut/copy and paste. Move to the last paragraph before the title **Summary** (the one starting Azoles with three or four...). Select the word **Azoles** and create a new anchor ('Azoles') as above (see figure 3). Reselect the text **Azoles** and choose **Edit/Copy** from the menu bar. Move the insertion point to the top of the document (below the link to **Summary**) and choose **Paste** from the edit menu. Reselect the text **Azoles** you just pasted, then click **Link** on the toolbar and select **Azoles** from the list presented. Click **OK** then check the new link as before. You may wish to create some more links within this document. When you have finished **Save** and **Close** the file. Note: take care when selecting text for anchors/links if you double-click you often select the word plus the following space and this may lead to problems in links not working.

### Exercise 4. Create the Reduced Mass Equation page

Source file *mass.doc* (you should have the ccubed font loaded). In this exercise you will practise text formatting, image re-sizing, adding alternative text for images (for browsers which do not support graphics), placing a box around a graphic and embedding an animation.

Open *mass.doc* within *MS Word*. To improve the image quality for the embedded graphics we will increase the resolution on file save. Click **Tools** on the menu, select **Options/General/Web Options/Pictures** and set the resolution (Pixels per inch) to 150 (just select and type over the default value of 96 in the box). Save the file as a filtered (or compact) web page, as before. Exit *MS Word*. Open *mass.htm* in *Netscape Composer*. Select the title text **Reduced Mass** and use the formatting toolbar items to change the paragraph style to **Heading 1** and change the **text colour** to dark blue then centre the text (use the **Alignment tool** on the **Formatting toolbar**). Select the **reduced mass equation** at the top of the page (it is an image). Use the right mouse button and select **Image Properties** from the **Image menu** (note that in the conversion of the file from .doc to .htm the image has been automatically named by the program). Click in the **Tooltip** box and enter **Reduced mass equation** (for older browsers also click in the **Alternate text** box and enter **Reduced mass equation**). Click **OK** to leave the dialogue box. The tooltip/alternative text will appear in the web page if the browser does not support graphics or if the mouse is passed over the image (*you should include an **Tooltip/Alternate text** description for all graphics*). Save the file and select **Browse** to view the file. Move the mouse over the image and a pop-up box will display the text entered. Close the browse window to return to editing mode.

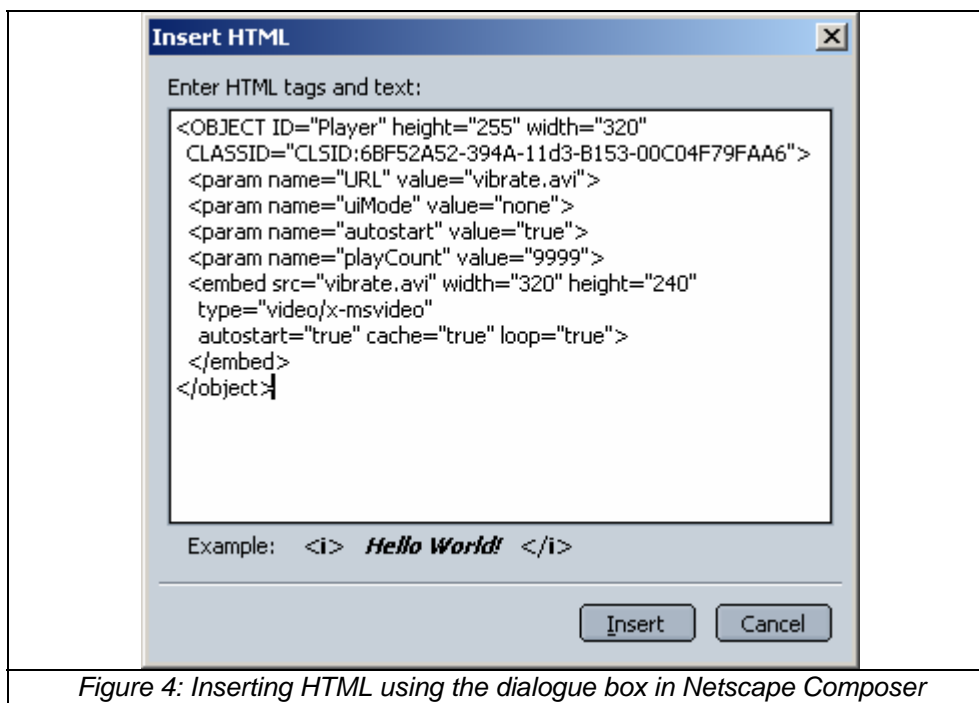


Figure 4: Inserting HTML using the dialogue box in Netscape Composer

Similarly select the **centre of gravity** graphic, use a right mouse click and choose **Image Properties**. Select the **Appearance** tab and set the attributes for **Spacing** to a **Solid border** of 2 pixels. Again enter the **Tooltip/Alternate text** dialogue in the

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**Location** tab and enter a suitable text description for the diagram. Click **OK**. Click outside the box. You should now have a box around the graphic. Add a **Tooltip/Alt. text** descriptor for the other two equations on the page.

Move to the bottom of the document. Here you will place a short animation of a vibrating molecule. Place the insertion point below the final text then select **Insert** from the menu items and **HTML** - this brings up a dialogue box. Now you have to embed the video clip and set the parameters (see figure 4).

The HTML script to enter (or you can find this code to copy/paste - using (say) Notepad - in the file avi.htm – use **ctrl-v** to paste the code into the dialog box) is...

```
<OBJECT ID="Player" height="240" width="320"
CLASSID="CLSID:6BF52A52-394A-11d3-B153-00C04F79FAA6">
  <param name="URL" value="vibrate.avi">
  <param name="uiMode" value="none">
  <param name="autoStart" value="true">
  <param name="playCount" value="9999">
  <embed src="vibrate.avi" width="320" height="240"
    type="video/x-msvideo"
    autostart="true" cache="true" loop="true">
  </embed>
</object>
```

Newer browsers use the *object* script to show videos but you need to include the *embed* command to allow for older browsers. The script may look difficult but can be pasted into documents and edited to reduce problems. The elements of the script are to set the Object ID to 'Player' (ie the Windows media player), to set the dimensions of the video to be screened (in pixels for height and width), to set the classID to that for the Windows media player (versions 7 to 10 work with this classID). Then we set some parameter values: the source file is set with 'URL', the startup mode of the player is set with uiMode (in this case we do not want to see the player controls – if you want to see them just leave this line out as the default is to see controls), we want the animation to run once loaded so the 'autoStart' value is set to 'true' (the alternative is 'false') and the 'playCount' is set to '9999' to keep the animation looping once loaded (you can set any value from 1 to 9999). Next we have the *embed* code, *src* - the file to play, *width/height* - the window dimensions in pixels, *type* - the file type, *autostart=true* - start immediately, *loop=true* - keep playing, *cache=true* - place file in the system cache for smoother playing. Note: The alternative to *True* is *False* when the action indicated would not occur. Finally we close the embed command with *</embed>* and then similarly close the object command with *</object>*.

Once the text is entered, click **Insert** (nothing will show on the screen at this stage). Click **File/ Save** and then open the file in Netscape browser. Scroll down the page and you should see the animation running. To stop the animation right click on it and use the control menu - to start it again right click on it and use the menu (you can of course stop the animation by closing the page). **Close** the browse window then **Close** the file.

## Exercise 5. Create the Introduction to VSEPR Theory pages

(VSEPR is *Valence Shell Electron Pair Repulsion*)

Here you will create several .htm files with links, graphics and animated molecules. In the first exercise an image is placed centrally on a blank page.

Start *Netscape Composer*. Choose **Insert** from the menu bar and select **Image**. Click on the **Choose File** button and select *vsepr.gif* from the list. Add a **Tooltip/Alt. Text** description as before. Click **OK**. You should now have on your page an image with a clipboard and the title **VSEPR**. Place the graphic centrally on the page using the **Alignment tool** on the **Formatting toolbar**. **Save** the file as *vsepr.htm* entering a suitable name for the title during the save dialogue. **Close** the file.

Next you will open some files created for you in .txt format and convert them to .htm files using MS Word, saving the resultant files as filtered html versions as before. Start *MS Word* and from the **File** menu select **Open**. Change the Files of type to **Text Files (\*.txt)** and select *vsepr1.txt* then **Open**. This file has been saved in .txt format and has carriage returns at the end of each line (*To view the paragraph marks use the Menu option Tools/Options and under Formatting marks check the box for Paragraph Marks – use the same option to turn them off after editing*). Most of these (ie those within paragraphs) should be removed for neatness, as the browser will word-wrap automatically. To remove the carriage returns place the insertion point at the end of a line press the *space bar* to generate one space then the *delete* key to remove the carriage return - repeat as often as necessary. Select the title text *Shapes of Molecules* and change it to **Heading 1** as dark blue text. Save as *vsepr1.htm* adding a suitable title then close the file. Repeat this process for *vsepr2.txt* and save as *vsepr2.htm* then close the file. Again repeat for *vsepr3.txt* save as *vsepr3.htm* and close it. (You could also cut/copy/paste from other file formats but some formatting may be lost). Exit Word.

Now you need to create some hyperlinks between the files.

In the first case the link is from an image in one file to another file. Open *vsepr.htm*. Right click on the image and choose **Image Properties**. Click on the **Link** tab and in the **Link to** box select the **Choose File** button. Browse and select *vsepr1.htm* by clicking **Open**. Click **OK** to close the **Image Properties** dialog box. This creates a link from *vsepr.htm* to *vsepr1.htm*. Save and view the file in Netscape Browser. Now when you move the mouse over the graphic the cursor changes to a hand indicating that a link is available. Return to editing mode. Under the graphic place a note to users – **Click on the graphic to start**. Centre the text then **Save** and **Close** the file.

Next you will open a file, add an image and image title, place some more text and create hyperlinks from text to other files.

Open *vsepr1.htm* move the insertion point to below the *Shapes of Molecules* heading and select the menu item **Insert/Image**. Select the file *so2.gif* (*remember the Tooltip/Alt. Text descriptor*) and click **OK**. You should now see a space-filling representation of the sulfur dioxide molecule on your page. Move the insertion point to below the image and give it a title (eg 'figure 1: the sulfur dioxide molecule') and

change the text for this title to italics. Now you need to enter some text to link to two files (already prepared for you) containing a list of some of the advantages and disadvantages of using VSEPR. At the bottom of the page type *Advantages and disadvantages of VSEPR*. Select (double click) on the text *Advantages* and click on **Link** on the toolbar. Select *advant.htm* from the list of files presented and click **OK**. Similarly link the text *disadvantages* to *disadv.htm*. The two words should now be displayed in colour and underlined (indicating hyperlinks). Now at the bottom of the file you will add a link to move to the next page. Type *Continue*. Select (double click the text) and link to *vsepr2.htm*. Save *vsepr1.htm* and close the file.

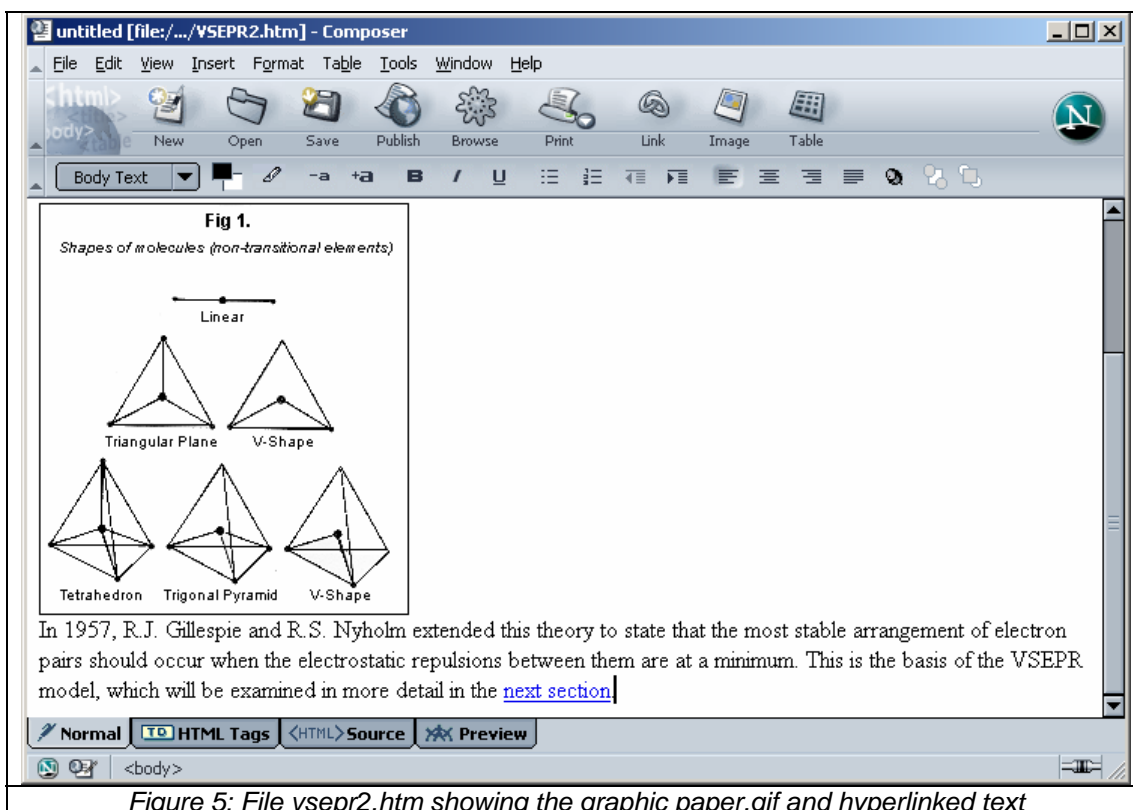


Figure 5: File *vsepr2.htm* showing the graphic *paper.gif* and hyperlinked text

In the next file you will again place an image plus image title and a hyperlink to another file. Open *vsepr2.htm* and insert the graphic *paper.gif* between the two paragraphs (*remember the Tooltip/Alt. Text descriptor*). Link the text at the end of the second paragraph (ie *next section* – see figure 5) to *vsepr3.htm*. Save and close *vsepr2.htm*.

Finally, you will add a number of images to a file, create some targets within the file, add an animation, create a table and new files to link with the table elements. These new files will incorporate **CHIME** molecule animations.

Open *vsepr3.htm*. Below the text *Assumptions in VSEPR* insert the image *ch4.gif* – add **Tooltip/Alt. Text** descriptor, give it a figure number and title in italic text. Within the section on electron pairs insert the graphic *epairs.gif* (add **Tooltip/Alt. Text** descriptor, give it a figure number and title in italic text). Within the section on electron repulsion effects insert the graphic *erepulse.gif* (add **Tooltip/Alt. Text** descriptor, give it a figure number and title in italic text).

Now create anchors for the 4 sections, *simplifications*, *electron pairs*, *base geometries* and *electron repulsion effects* - make sure you give each a unique identifier. Move to the top of page and under the text *Assumptions in VSEPR* create a bulleted list with the 4 section names and link these to each of the targets.

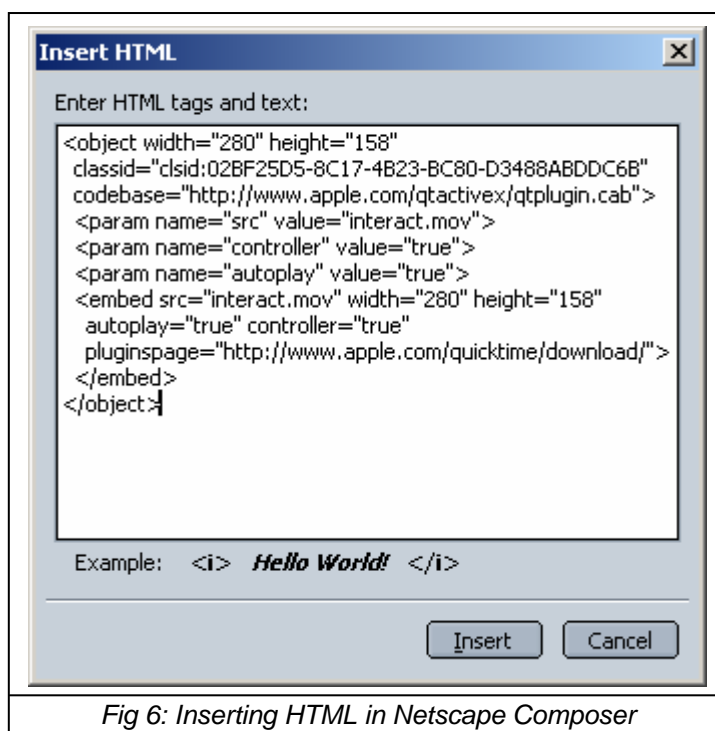


Fig 6: Inserting HTML in Netscape Composer

In the section on *simplification* you are going to insert an animation. To do this you need to embed the file using html tags. Select *Insert/Html...* from the *Insert* menu and type (or you can find this code to copy/paste in the file mov.htm) the script (as in fig 6) in the box.

(The elements of the command are similar to those used previously to place the file, vibrate.avi but in this case we are using a Quicktime .mov file).

Save the file.

There is now one more item to enter. In the section 'base geometries' you need to create a table. Click *Table* on the toolbar and create a table with 6 rows and 2 columns, set the table width to 50% of the window (leave the other settings as defaults). Click *OK*. Enter the following data...

number of electron pairs	base geometry
2	linear
3	trigonal planar
4	tetrahedral
5	trigonal bipyramidal
6	octahedral

Select *Table/Table Properties* from the menu bar. Select the *Cells* tab and on the *Selection* area click the down arrow next to *Cell* and choose *Column*. In the *Size* area change the width parameter from *pixels* to *% of table* (by clicking on the appropriate

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down arrow). Set the column width to 50% of table, click *Next* in the *Selection* area and set the width of the second column to 50% of table. Click OK. Select the cell with **number of electron pairs** and again select *Table/Table Properties* and the *Cells* tab this time leave the *Selection* area set to *Cell* and change the *Cell Style* to *Header* (using the down arrow as before), repeat for the other header (**base geometry**). The text should now be bold in the 2 header cells. Finally, centre the text in the table by selecting *Table/Select/All Cells* from the menu bar and using the *Alignment tool* on the formatting toolbar. Similarly use *Table/Select/Table* and the *Alignment tool* to centre the table on the page.

You now need to create links from the table to show each of the base geometries as static diagrams and animated molecules. This latter involves embedding *CHIME* tags in a document. Click *New* in the toolbar to create a blank page. Choose *Image* from the toolbar and select the file *linear.gif* (add *Tooltip/Alt. Text* descriptor). Click the *Appearance* tab and set the parameter *Spacing* to 20 pixels for the *Left and right* item. Click *OK*.

Now you must enter the embedding code for the animation. Click to the right of the graphic to set the insertion point. Click *Insert* from the menu bar, choose *Html* and enter the command...

```
<embed src="becl2.pdb" display3D="ball&stick" width="300" height="300" spinx="30" spiny="30" spinz="30" spinfps="20" startspin="true">
```

(The elements of the command are *embed* - place here, *src* - the file to place, *display3D* - the type of display to use, *width/height* - the window dimensions in pixels, *spinx* - the amount of spin in the x plane, *spiny* - the amount of spin in the y plane, *spinz* - the amount of spin in the z plane, *spinfps* - the number of spin frames per second, *startspin=true* - start playing immediately. Note: The alternative to *True* is *False* when the action indicated would not occur).

Click *Insert*. Click to the left of the graphic to set the insertion point and create some space at the top of the page by making a few carriage returns. Move to the top of the page and create a link back to the original document by typing *Return*. Select the text and link this to *vsepr3.htm*. Save the new file as *3dbecl2.htm* (give the page the title *Linear molecule*) and close.

Create 4 new files with the following properties (create links back to *vsepr3.htm*)...

Title	Image	CHIME file	Save as
Trigonal planar molecule	trigplan.gif	bf3.pdb	3dbf3.htm
Tetrahedral molecule	tetrahed.gif	ch4.pdb	3dch4.htm
Trigonal bipyrimidal molecule	trigbipy.gif	pf5.pdb	3dpf5.htm
Octahedral molecule	octahed.gif	sf6.pdb	3dsf6.htm

Return to file *vsepr3.htm* and create links from each of the base geometries in the right hand column of the table to the graphic files you have now created (eg select the text 'linear' in the table, select *Link* on the toolbar and enter *3dbecl2.htm* in the *Link to* box). *Vsepr3.htm* is now complete! *Save* and *Close* the file.

## Exercise 6. Preview the whole web site

Now return to the file *chemweb.htm* (see figure 7) and preview the whole of your web pages .

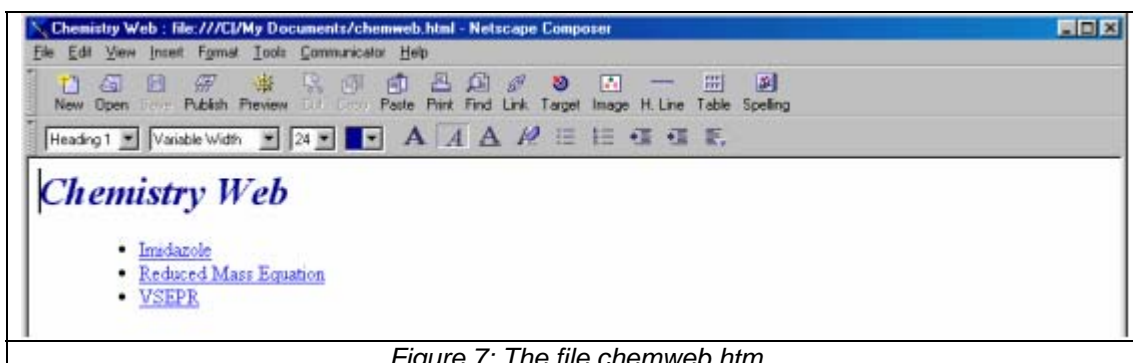


Figure 7: The file chemweb.htm

## Exercise 7. Additional operations

You may like to add some more navigation aids (eg in long documents it is helpful to but *back to top* markers in the text). The 3 files *agdown.gif*, *agleft.gif* and *agup.gif* provided are animated gif files. Try inserting one in one of your files, save the file and preview to see the effect.

Also observe the difference between using the *return* markers you placed in documents (eg the links back to the table of base geometries) and the navigation bar *back* button. The latter remembers where you were in the file, the former returns to the top of the file (you can correct this by returning to an *anchor* in the document).

Open one of your .htm files in *Netscape Composer* and look at the html code (**View/ Page Source**).

Experiment with the object/embed commands changing the parameters and observing the effects. For example, the following code would allow the use of the mpeg file, test.mpg (not supplied)...

```
<OBJECT ID="mediaPlayer" height="300" width="240"
  CLASSID="CLSID:6BF52A52-394A-11d3-B153-00C04F79FAA6">
  <param name="URL" value="test.mpg">
  <param name="autoStart" value="true">
  <embed src="test.mpg" width="300" height="240" type="video/x-mpeg"
    autoplay="true" controller="true">
  </embed>
</object>
```

# The Higher Education Academy Physical Sciences Centre

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chemistry, physics and astronomy  
within the university sector.*

Physical Sciences Practice Guides are designed to provide practical advice and guidance on issues and topics related to teaching and learning in the physical sciences. Each guide focuses on a particular aspect of higher education and is written by an academic experienced in that field.

“An Introduction to the Web and Web Authoring” is a practice guide that introduces the basic points regarding the world wide web and web authoring. It is intended as a useful document for academics wishing to create web based material. Also included are some pointers regarding the capabilities of the web, the main concerns to consider when using the web plus some guidance on using the web for teaching. The content is largely based upon materials used in a series of workshops originally created by the CTI Centre for Chemistry and latterly run by the Physical Sciences Subject Centre.

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