

# digital *multimedia*

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Graphics and Colour  
Video and Animation  
Sound  
Text and Typography  
Hypermedia  
Flash and DOM Scripting  
Multimedia and Networks

Third  
Edition

# 12

## Interactivity

**Based on material from  
*Digital Multimedia*, 3rd edition  
published by John Wiley & Sons, 2009  
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Nigel Chapman and Jenny Chapman**

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# Interacting With Multimedia

**Controls used by software for playing time-based media are derived from an established set of buttons used by physical media players: play, pause, stop, rewind, fast forward.**

**Software allows controls to be more flexible than their physical equivalents.**



volume  
beginning  
previous  
rewind  
play  
next  
fast forward  
end

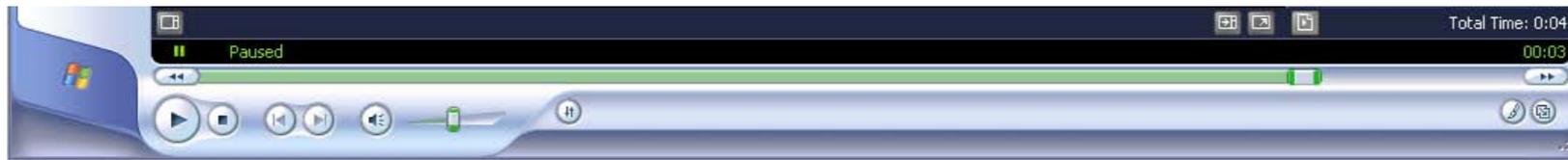
*QuickTime Player controls*



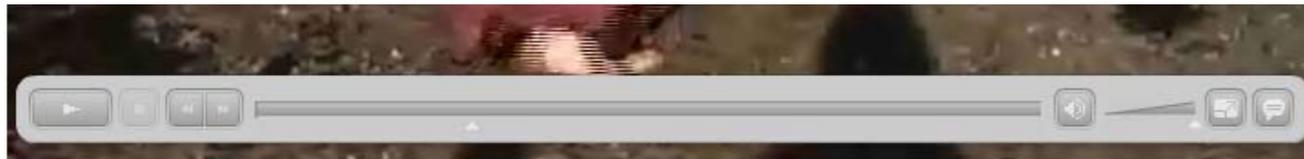
pause

*QuickTime Player controls  
while playing*

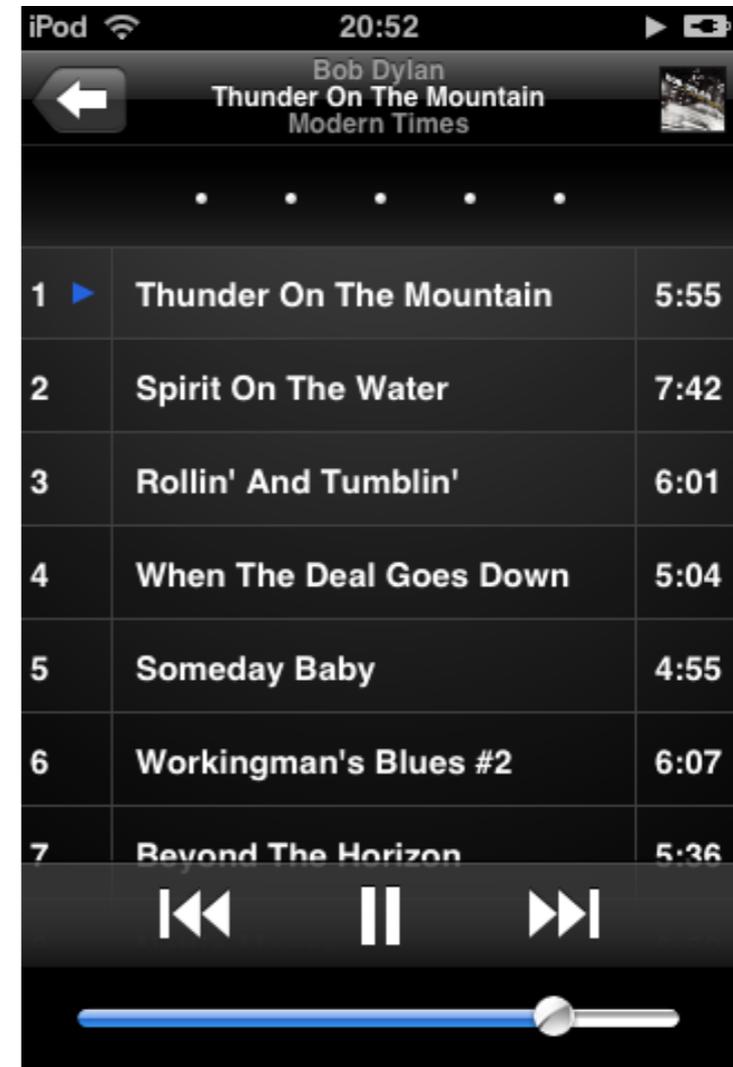
**Media player controls use semiotic and gestalt principles: a set of standard icons are arranged so that they are perceived as a unit.**



*Windows Media Player controls*



*Flash video playing controls*



*iPod touch controls*

**In hypertext, some means of indicating that a link can be followed by clicking is required; there is no precedent for this requirement in traditional media.**

**Underlining is the most common signifier for links. It may be implemented in CSS as a text decoration or a bottom border on a elements.**

**It is common practice to add some highlight to links when the cursor moves over them, to indicate that something will happen if a user clicks.**

Visit the [Web Design book's support site](#) for more details.

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*Different ways of underlining links*

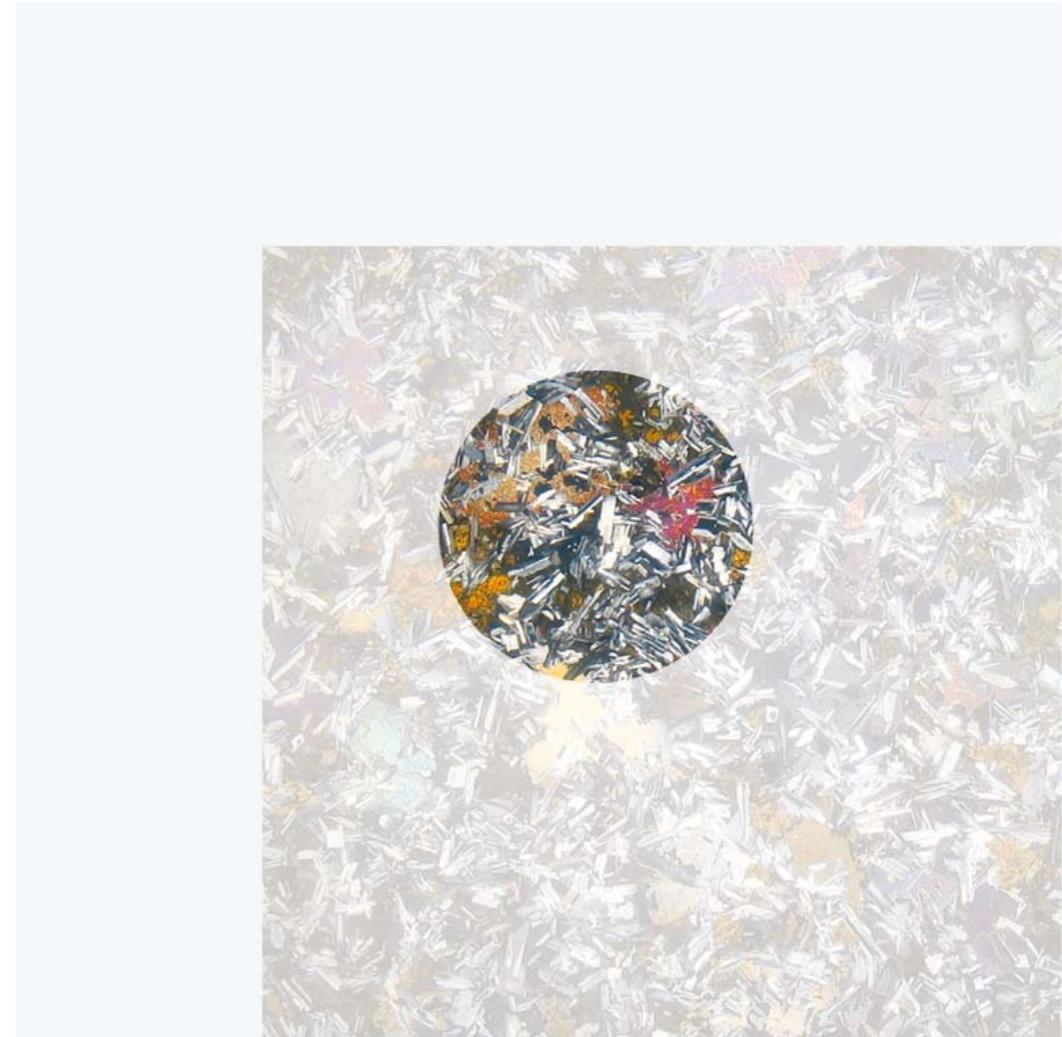
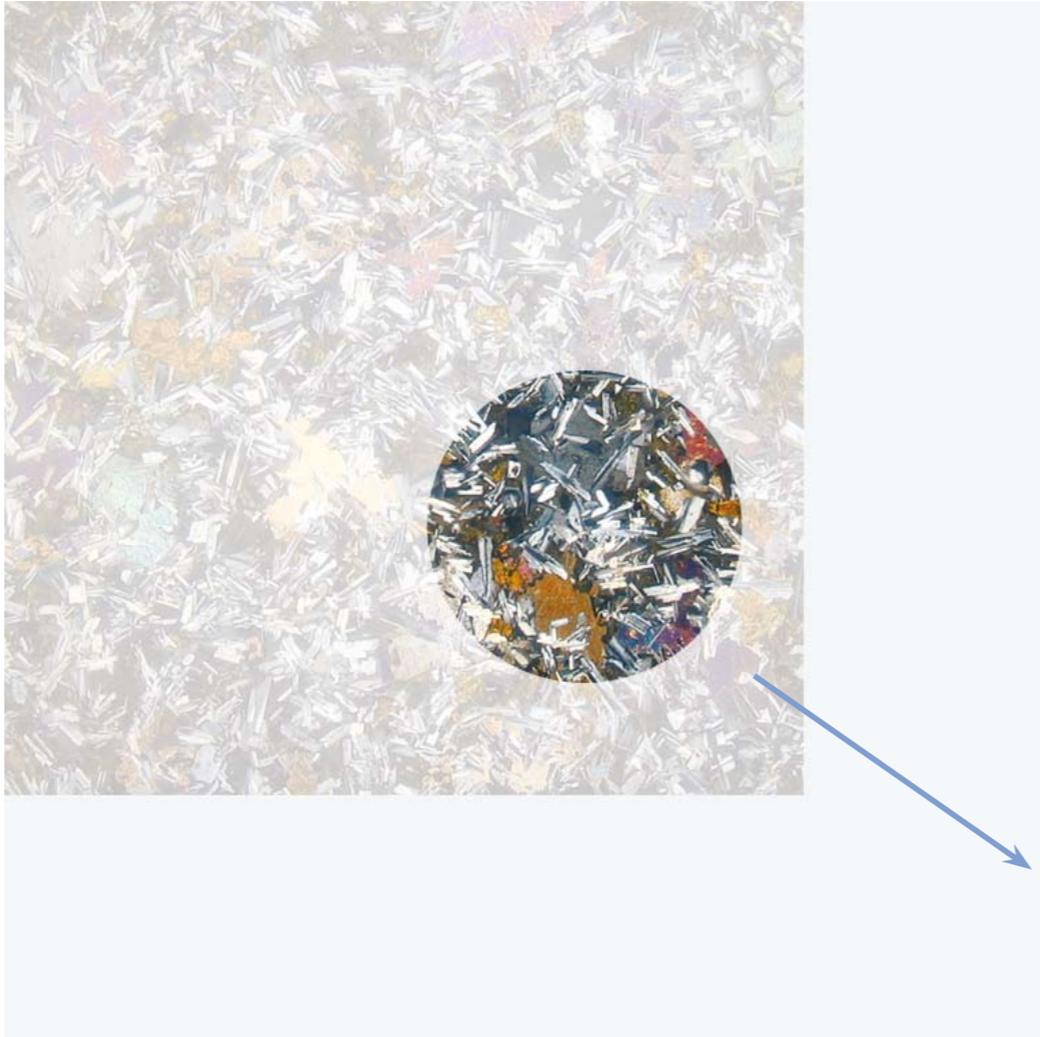
**Navbars and other collections of links may be moved to a separate area, where their function is evident without additional decoration.**

**Signifying the presence of links on images is problematic and no convention for this has yet been developed.**

**Users often expect images to have links on them. Provide a link where possible, but avoid using an image as the only link to a destination.**

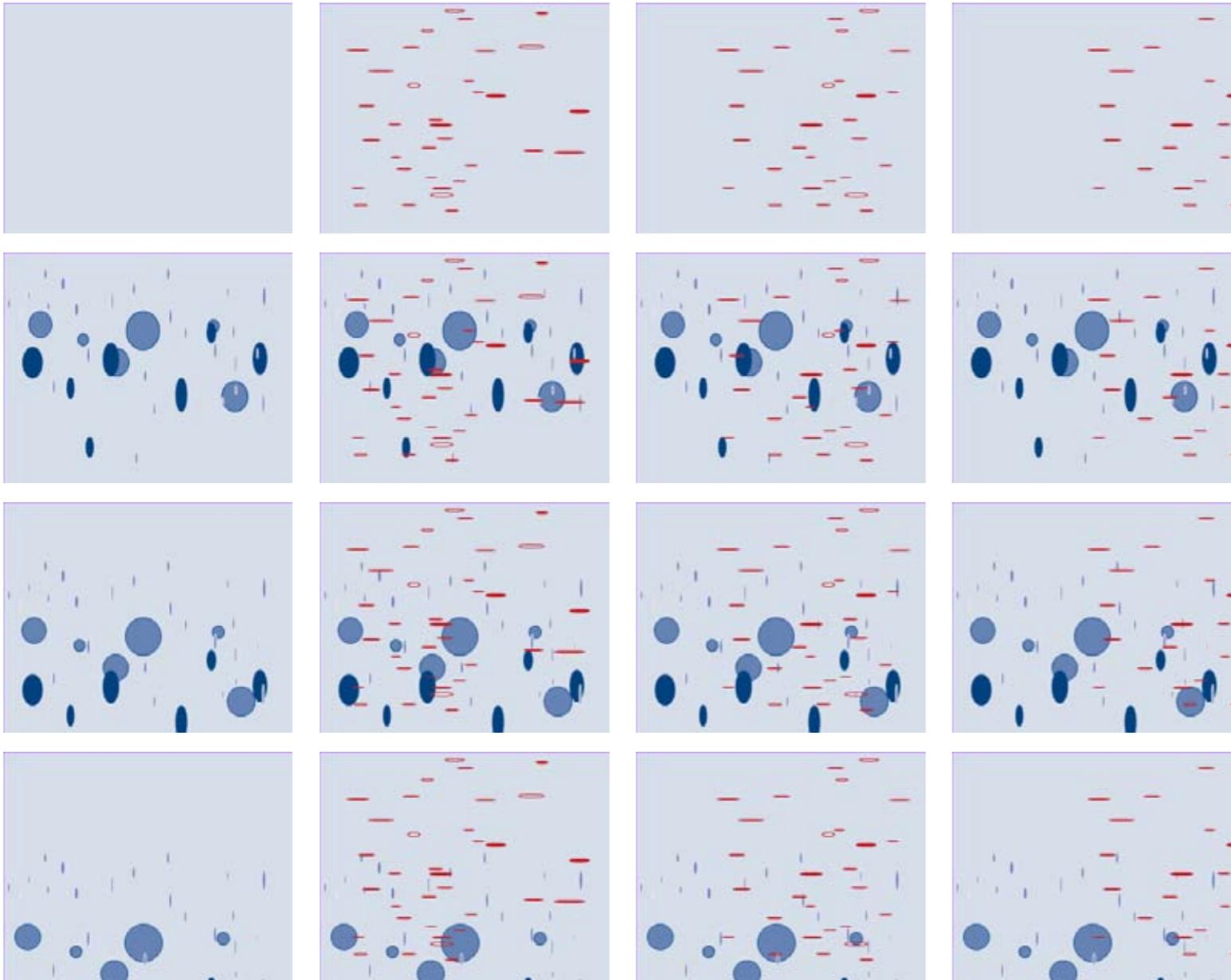
**Scripting permits the creation of arbitrary controls and types of interaction.**

**Direct manipulation by dragging is used to move around panoramas, maps and other large images.**

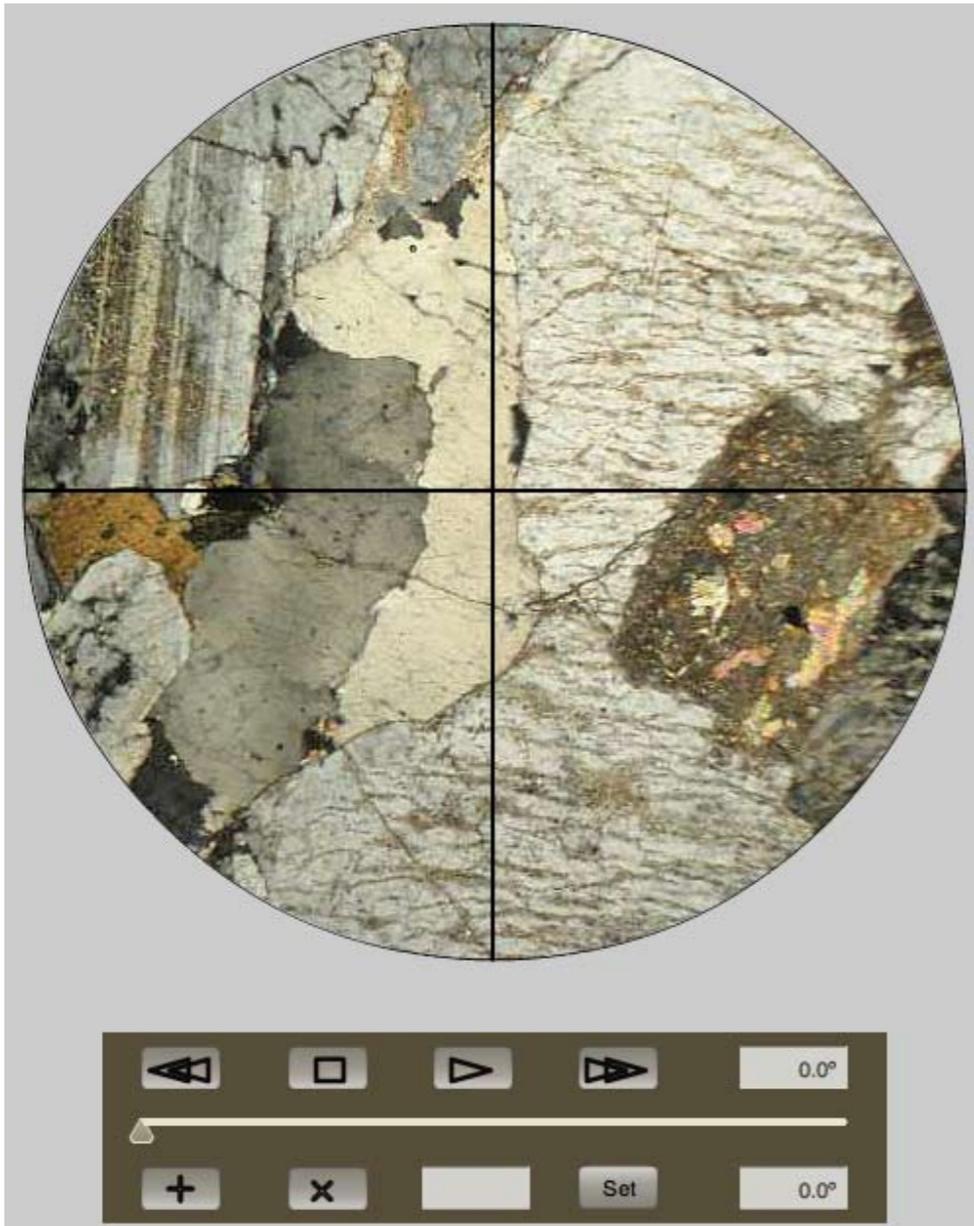


*Image dragging*

**Controlling the timeline of Flash movie clips using mouse movements can present the illusion of directly manipulating objects on the screen, for example, by causing them to rotate when a slider is dragged.**



*A simple interactive animation*



*Interactive manipulation of a Flash movie*

**Scripts can be used to implement remote rollovers, to display supplementary information, make image galleries and to display images and text in various space-saving layouts, such as tabbed panels.**



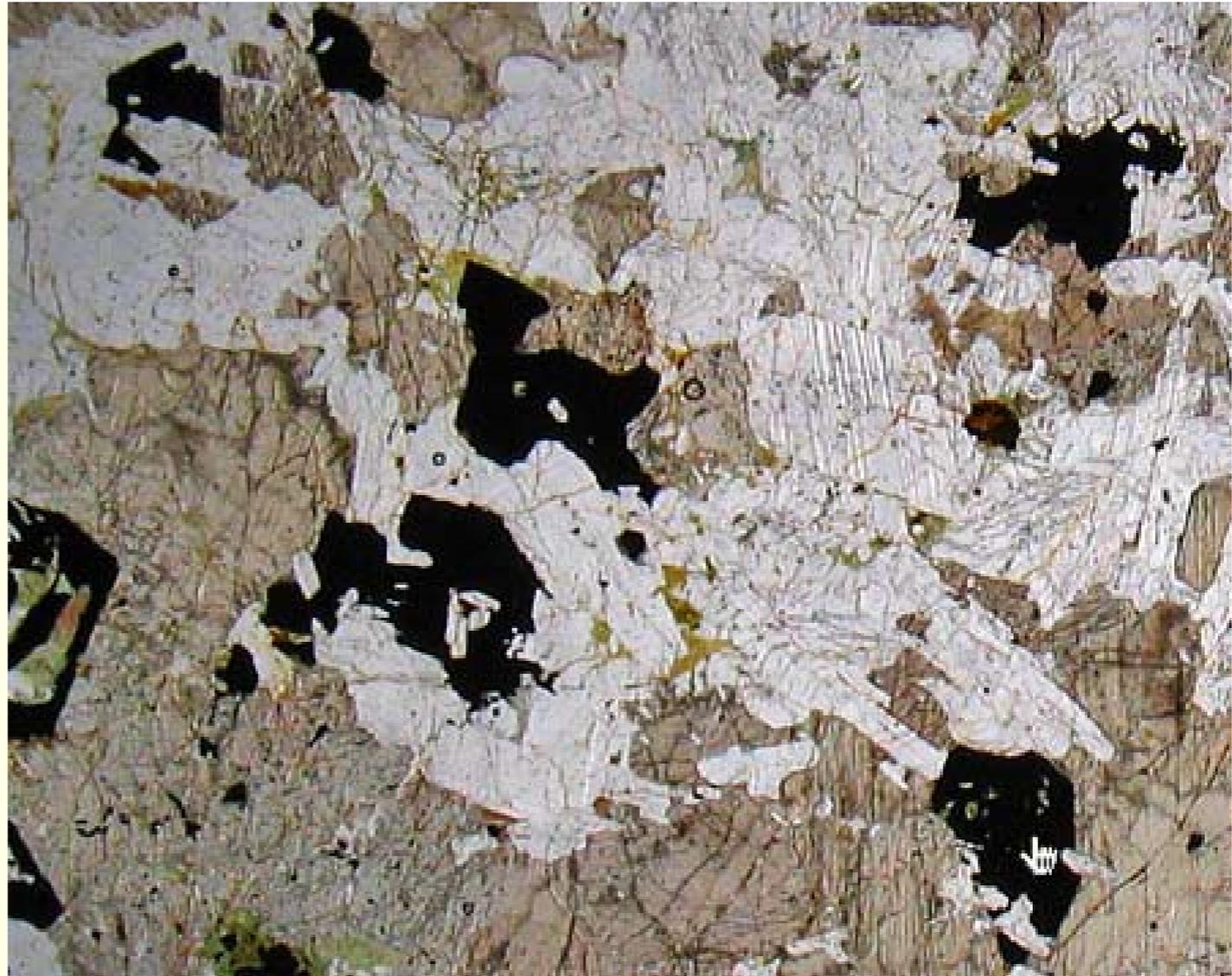
### Minerals

Plagioclase  
feldspar

Augite

➡ Magnetite

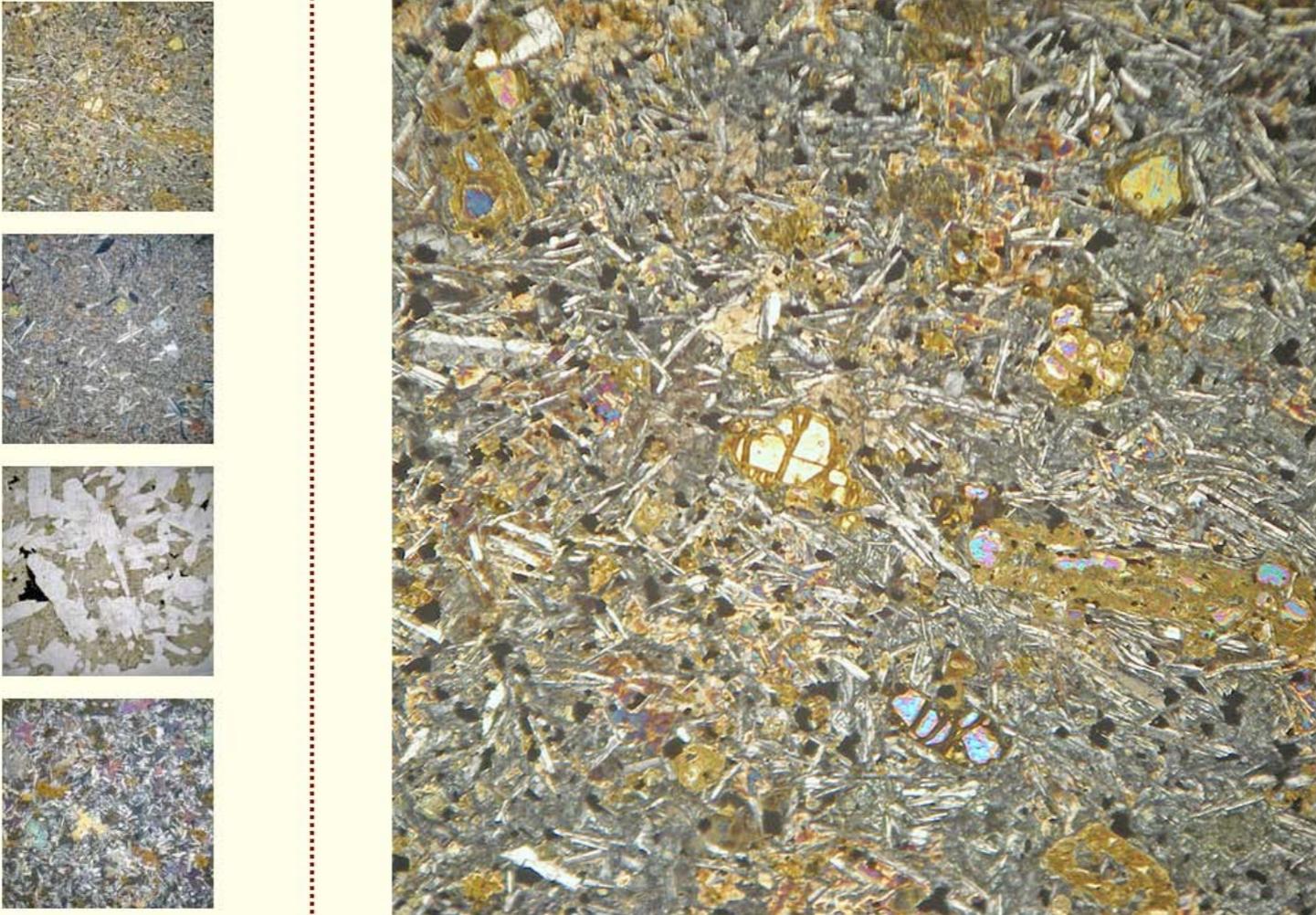
Chlorite



*Displaying supplementary information using a remote rollover*

*Gallery of Minerals*

Click on a thumbnail to see a larger image.



The gallery displays four small thumbnail images on the left, each showing a different mineral specimen. The largest image on the right is a detailed view of a mineral specimen, likely a rock thin section, showing a complex texture with various colors (yellow, blue, purple, white) and textures (crystals, fibers, and granular material).

*An image gallery*

Image Description Details

## Basalt

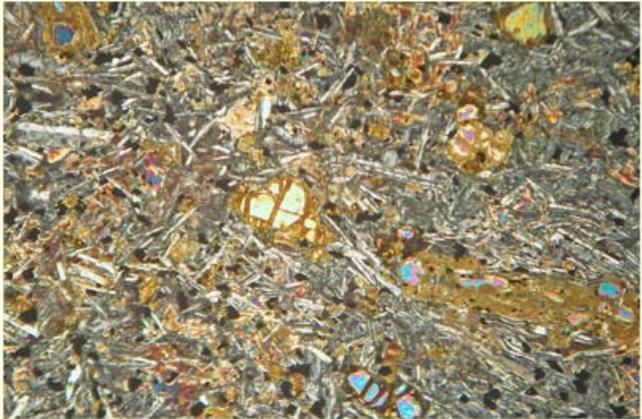


Image Description Details

Plateau basalt, containing ophitic pink titaniferous augite, euhedral olivine, with edges and cracks altered to iddingsite, but with unaltered centres. Groundmas of plagioclase feldspar laths and chlorite.

Field of View 3mm.

Image Description Details

**Location**  
Quarry, near Ulva Ferry, Isle of Mull, Scotland.

**Minerals**

- Plagioclase feldspar
- Titanaugite
- Olivine
- Chlorite
- Iddingsite

**Textures**

- Ophitic



*Tabbed panels*

**Using scripts to display different controls according to context can reduce screen clutter and eliminate ambiguity in the user interface.**

**Using a script to create controls for operations that depend on scripting ensures that the controls will not be visible if they cannot be operated successfully.**

**SUBTITLES**      **ON**      **OFF**

**SUBTITLES ARE**      **ON**  
**TURN SUBTITLES**      **OFF**

**SUBTITLES ARE**      **OFF**  
**TURN SUBTITLES**      **ON**

*Resolving ambiguity in controls*

**Slide shows and presentations incorporating transitions, animated effects and time-based media can be created as Flash movies or using specialized software, such as PowerPoint.**

# Interacting Through Multimedia

**By embedding controls in multimedia, we can provide ways of interacting with data or computation.**

**Standard dialogue controls can often be used for such purposes.**

**XHTML provides input elements, for text fields, check boxes, radio buttons, etc., textarea for multiple lines of text and select and option elements for pop-up menus and lists.**

**These elements are used within a form to send data to a script on the server.**

Please help us to plan supplements and possible future editions of *Digital Media Tools* so that we can try to meet your needs better.

Course Details

Institution:

Country:

Approximate number of students using media tools software on your course:

Use of Media Tools Software

If your course uses any of the following tools, please select the versions you are currently using from the pop-up menus.

Photoshop:

Flash:

Dreamweaver:

Upgrading

How often do you upgrade the media tools software used on your course?

Shortly after the release of each new version

Within one year of the release of each new version

At irregular intervals

Only when it becomes impossible to continue with the present versions

Different patterns for the different tools

Platforms

Which operating systems does the course make significant use of? (Check any boxes that apply.)

Windows XP

Windows Vista

MacOS X

Linux

Other Unix

Other Comments

If you have any other comments about your use of media tools software, which you think might be helpful to us in planning future supplements and new editions, please enter them here.

Text fields

Pop-up menus

Radio buttons

Check boxes

Text area

Buttons

*An XHTML form showing several types of control*

<b>type Attribute</b>	<b>Control</b>	<b>Type-specific Attributes</b>
text	text input field	maxlength
checkbox	check box	checked, value
radio	radio button	
submit	submit button	
reset	reset button	
button	push button	
file	file selector	

*Principal types of input element*

**Flash UI components provide the same controls, plus a few others. They must be combined with some ActionScript to do anything useful.**

**Course Details**

Institution:

Country:

Approximate number of students using media tools software on your course:

**Use of Media Tools Software**

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Photoshop

Flash

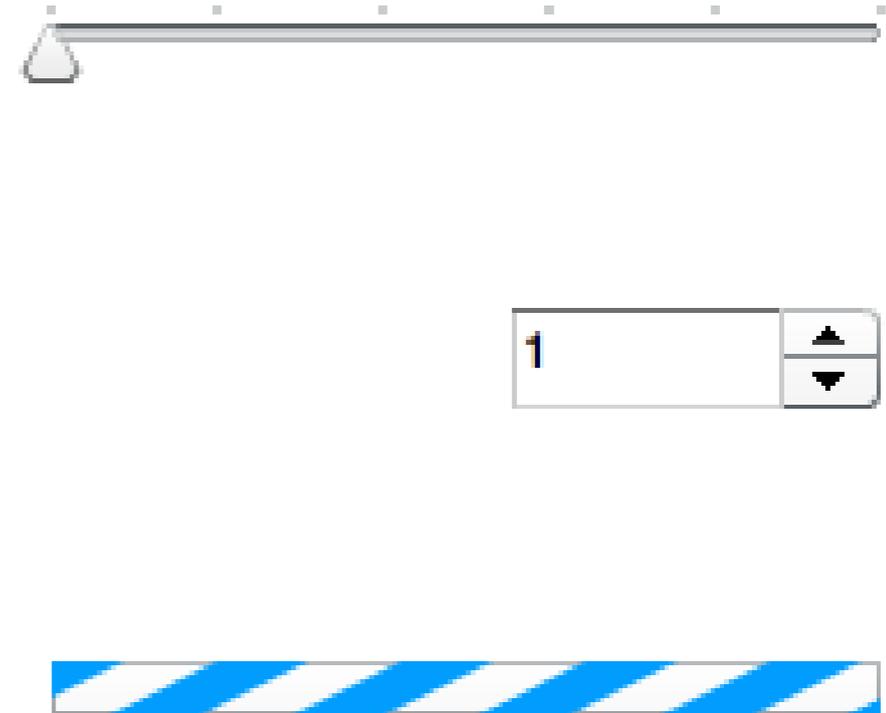
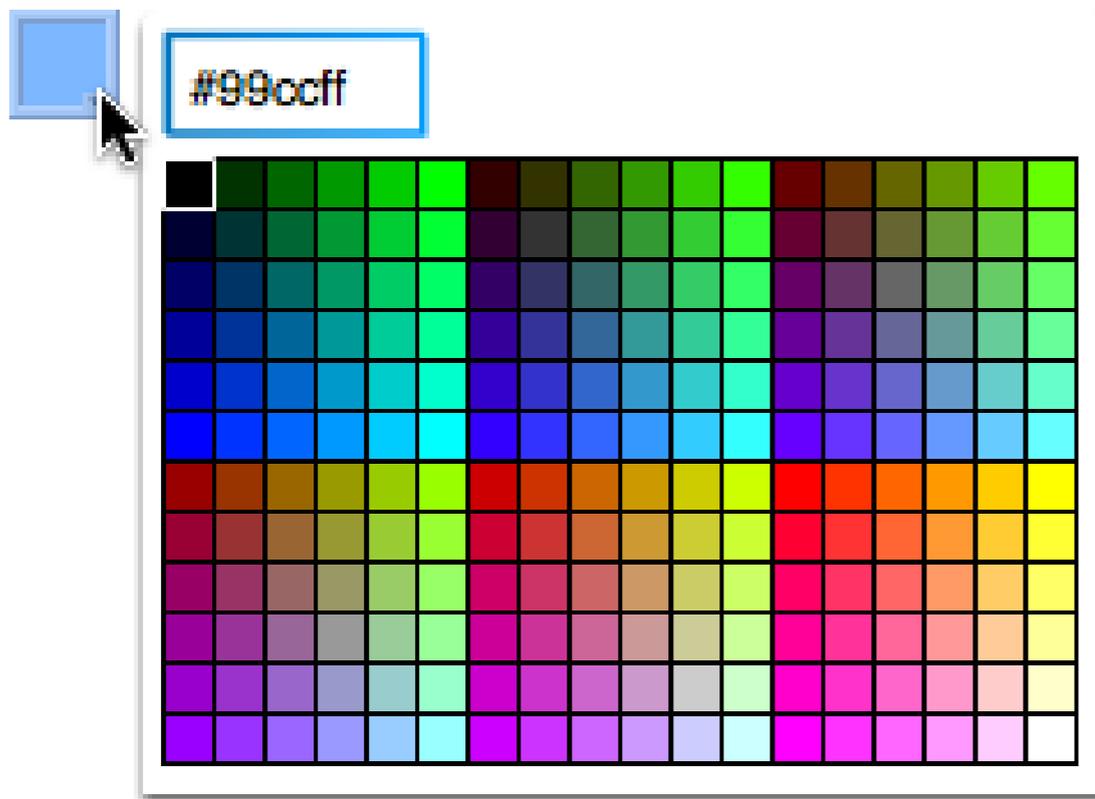
Dreamweaver

  
Earlier Than CS  
CS  
CS 2  
CS 3  
CS 4

FreeBSD	▼
Ubuntu	
Fedora	
Red Hat	
Debian	
CentOS	

*Flash text field, label and combo box components*

*A ComboBox*



*ColorPicker, Slider, NumericStepper and ProgressBar components*

**Flash movie clips and ActionScript can be used to create interfaces that are not restricted to using standard controls.**

**Flash-based interfaces can be used in a Web browser or in desktop applications using AIR.**

**Multimedia applications which do something new may require innovative interface design.**

**Users will draw on existing experience when trying to use new interfaces, so familiar features and ideas should be used where possible.**

**JavaScript and other Web-standard technology can be used to program multimedia interfaces, but the possibilities are less extensive than those which Flash offers.**

**JavaScript libraries are used to make the task simpler.**