National Unit specification

General information

Unit title: Computing: Website Graphics (SCQF level 5)

Unit code: H614 45

Superclass:	CB
Publication date:	December 2013
Source:	Scottish Qualifications Authority
Version:	01

Unit purpose

This Unit is designed to develop knowledge and understanding of the main technical aspects of using graphics and digital images in websites. Learners will develop practical skills in creating graphics and optimising graphics and digital images for use on websites. Learners will also develop practical skills in the creation of simple web pages that incorporate text and optimised graphics.

This is an introductory Unit aimed at learners who have an interest in using graphics in webpage design.

This is an optional Unit within the National Certificate in Computing with Digital Media at SCQF level 5, a mandatory Unit within the NPA in *Web Design Fundamentals* at SCQF level 5 and is also available as a free-standing Unit.

Outcomes

On successful completion of the Unit the learner will be able to:

1 Describe the technical aspects of website graphics and digital images.
2 Produce graphics for a given website brief.
3 Create a webpage with optimised digital images and graphics for a given brief.

Credit points and level

1 National Unit credit at SCQF level 5: (6 SCQF credit points at SCQF level 5)

National Unit specification: General information (cont)

Unit title: Computing: Website Graphics (SCQF level 5)

Recommended entry to the Unit

Entry is at the discretion of the centre. Learners doing this Unit do not need prior knowledge.

However it would be beneficial if learners possessed basic digital literacy skills.

This may be evidenced by possession of: F3GC 10 *Information and Communication Technology* or equivalent qualifications or experience.

Core Skills

Opportunities to develop aspects of Core Skills are highlighted in the Support Notes for this Unit specification.

There is no automatic certification of Core Skills or Core Skill components in this Unit.

Context for delivery

If this Unit is delivered as part of a Group Award, it is recommended that it should be taught and assessed within the subject area of the Group Award to which it contributes.

The Assessment Support Pack (ASP) for this Unit provides assessment and marking guidelines that exemplify the national standard for achievement. It is a valid, reliable and practicable assessment. Centres wishing to develop their own assessments should refer to the ASP to ensure a comparable standard. A list of existing ASPs is available to download from SQA's website **(http://www.sqa.org.uk/sqa/46233.2769.html)**.

Equality and inclusion

This Unit specification has been designed to ensure that there are no unnecessary barriers to learning or assessment. The individual needs of learners should be taken into account when planning learning experiences, selecting assessment methods or considering alternative evidence.

Further advice can be found on our website **www.sqa.org.uk/assessmentarrangements**.

National Unit specification: Statement of standards

Unit title: Computing: Website Graphics (SCQF level 5)

Acceptable performance in this Unit will be the satisfactory achievement of the standards set out in this part of the Unit specification. All sections of the statement of standards are mandatory and cannot be altered without reference to SQA.

Outcome 1

Describe the technical aspects of website graphics and digital images.

Performance Criteria

(a)   Describe the uses of graphics and digital images in websites.
(b)   Identify and describe the web graphic file formats.
(c)   Identify the key copyright considerations related to graphics and digital images.
(d)   Describe the principal accessibility and usability issues which must be considered when using graphics on a website.

Outcome 2

Produce graphics for a given website brief.

Performance Criteria

(a)   Capture digital images using digital cameras and scanners.
(b)   Create graphics which include text, colour and simple shapes.
(c)   Optimise digital images and graphics for use on a web page.

Outcome 3

Create a webpage with optimised digital images and graphics for a given brief.

Performance Criteria

(a)   Create a basic HTML web page.
(b)   Incorporate text and optimised digital images and graphics in the web page.
(c)   Upload the web page to a server.
(d)   Test the operation of the uploaded web page.

National Unit specification: Statement of standards (cont)

Unit title: Computing: Website Graphics (SCQF level 5)

Evidence Requirements for this Unit

Evidence is required to demonstrate that learners have achieved all Outcomes and Performance Criteria.

Learners must demonstrate an understanding of the technical aspects of website graphics and digital images.

Learners must demonstrate that they can acquire, create and optimise digital images for use in a website and create a webpage containing text and optimised images.

Outcome 1

For Outcome 1, evidence generated under controlled, supervised closed-book conditions is required.

The evidence must show that learners can:

♦ identify three graphic file formats commonly used for websites and describe their properties.
♦ describe three uses of graphics and/or digital images on a website.
♦ identify two copyright considerations related to graphics and digital images.
♦ describe one accessibility issue when using graphics on a website.
♦ describe one usability issue when using graphics on a website.

Outcome 2

For Outcome 2, product evidence generated under supervised open-book conditions is required.

The evidence must show that learners can acquire, create and optimise digital images and graphics for a website to a given brief. A minimum of three optimised digital images and graphics should be produced which between them should include:

♦ at least one image captured using a scanner
♦ at least one photographic image captured using a digital camera
♦ text
♦ colour
♦ simple shapes

National Unit specification: Statement of standards (cont)

Unit title: Computing: Website Graphics (SCQF level 5)

Outcome 3

For Outcome 3, evidence generated under supervised open-book conditions is required.

The evidence must show that learners can create an HTML web page which incorporates optimised graphics and digital images. The completed web page must include text and use Cascading Style Sheets (CSS) for all formatting.

The HTML produced must demonstrate at least:

♦ Structure and layout tags
♦ Paragraph and headings
♦ Links
♦ Images
♦ A List

Evidence must also be generated that shows the learner can upload the web page and test the operation of the web page.

The evidence for Outcomes 2 and 3 may be produced at appropriate points throughout the Unit rather than on one assessment occasion.

Learners are allowed access to suitable online and offline materials during the open-book assessments for Outcomes 2 and 3.

National Unit Support Notes

Unit title: Computing: Website Graphics (SCQF level 5)

Unit Support Notes are offered as guidance and are not mandatory.

While the exact time allocated to this Unit is at the discretion of the centre, the notional design length is 40 hours.

Guidance on the content and context for this Unit

This is an optional Unit within the NC in Computing with *Digital Media at SCQF level 5, a mandatory Unit within the NPA in Web* Design Fundamentals at SCQF level 5 and is also available as a free-standing Unit.

The overall aim of the Unit is to provide learners with knowledge and skills to design and create visually literate, efficient and effective webpages using web authoring software.

The precise content of this Unit will change over time, as technology develops.

The content of Outcome 1 should focus on the underpinning knowledge and understanding required to use graphics and digital images effectively in webpages. At this level, learners are not required to have a deep understanding of each of the knowledge areas and content should be limited to basic facts, presented within the context of creating a website.

The common graphic file formats, JPG, PNG and GIF should be considered and the appropriate use of each depending on the properties required by the graphic, ie JPG — millions of colours, no transparency, PNG millions of colours and transparency, GIF 256 colours, transparency and animation, etc. SVG should also be considered and demonstrated.

Optimisation of web graphics, ie the best quality with the smaller file size should be covered in detail. Other features of these file formats, such as compression, interoperability and plug-in requirements should be covered. The uses of graphics which are created from scratch, or are created and incorporate digital images (photographs) for the purpose of logos, banners, corporate identity, adverts, animations, etc should be covered. Digital images (photographs) for displaying and promoting products, for use in image galleries, to create visual interest in websites should be covered. The importance of using high quality images should be encouraged.

Copyright should be considered in terms of how to remain within the boundaries of current legislation, and the penalties for breaching that legislation. The practicalities and reasoning behind accessibility and usability should be discussed, with reference to current legislation. Simple practical methods of improving usability and accessibility should be demonstrated, such as alternative text for images, images that are relevant and enhance the functionality of the website and optimal file size.

National Unit Support Notes (cont)

Unit title: Computing: Website Graphics (SCQF level 5)

For Outcome 2, learners should be given an opportunity to use both digital cameras and scanners and to investigate some of the basic settings and features of the devices. Access to both bitmap and vector editing tools would be advantageous. Learners should gain experience of editing and enhancing digital photographs as well as creating new images using drawing and paint tools.

Learners should be encouraged to identify possible uses of graphics on a website. This may include, company logos or branding, banners, photos for use in image galleries that require both a thumbnail and full size version of the same image, and photos to promote products or advertisements.

Learners must adhere to copyright legislation (covered in Outcome 1) when creating graphics and digital images.

In the delivery of Outcome 3 it would be advantageous to cover both hand-coding of HTML and CSS as well as web authoring software/WYSIWYG editors for the creation of webpages. The webpages can be uploaded to an external web server or an internal server. Testing to make sure that webpages are operational and all graphics and digital images load quickly and display as expected should also be covered.

Guidance on approaches to delivery of this Unit

The overall aim of the Unit is to provide the learners with knowledge and skills to create graphics and optimise graphics and digital images for use on websites.

Learners will require individual access to the internet and appropriate hardware and software throughout this Unit.

Learners will need access to a scanner and digital camera. The digital camera may be integrated into a device such as a mobile phone or a tablet.

Learners will need access to graphics software, for example Adobe Fireworks, GIMP, pixlr.com, and web authoring software, for example Adobe Dreamweaver, Microsoft Expression Web.

It is advisable that the Outcomes are delivered in sequence in an integrated manner.

Learners will benefit from being introduced to the technical aspects and properties of various graphic file formats before creating them.

Practical activities in Outcomes 2 and 3 should be taught and used to illustrate and exemplify the knowledge and understanding required for Outcome 1.

The following list gives guidance on what content should be covered for Outcome 1:

National Unit Support Notes (cont)

Unit title: Computing: Website Graphics (SCQF level 5)

Web graphic file formats and properties:

♦   JPG — millions of colours, no transparency support, lossy
♦   PNG — millions of colours, transparency support, lossless
♦   GIF — 256 colours, transparency, animation
♦   SVG — vector, resolution independent

Uses of graphics on websites:

♦   Logos
♦   Banners
♦   Corporate identity
♦   Visual interest/eye catching
♦   Promote products and services
♦   Sprites
♦   Galleries/slide shows

Copyright consideration:

♦   intellectual property
♦   copyright symbols
♦   penalties for breach
♦   derivative works
♦   academic standards
♦   citations

Accessibility:

♦   colour schemes for vision impairments
♦   alternative text for graphics

Usability:

♦   relevant images
♦   optimisation
♦   file size

Guidance on approaches to assessment of this Unit

Evidence can be generated using different types of assessment. The following are suggestions only. There may be other methods that would be more suitable to learners.

Centres are reminded that prior verification of centre-devised assessments would help to ensure that the national standard is being met. Where learners experience a range of assessment methods, this helps them to develop different skills that should be transferable to work or further and higher education.

National Unit Support Notes (cont)

Unit title: Computing: Website Graphics (SCQF level 5)

Outcome 1 should be assessed separately, and it may be useful to assess this towards the end of the Unit after learners have had an opportunity to gain practical experience in the use of the knowledge areas outlined in the Performance Criteria. The instrument of assessment should provide opportunities for all Performance Criteria to be fulfilled, by means of sampling across the range of the content of Outcome 1. If a reassessment is required, it should contain a different sample from the range of mandatory content.

The evidence for Outcomes 2 and 3 should be generated under open-book conditions, whether this need be under supervised or unsupervised conditions is at the discretion of the assessor and the centre; however evidence must be produced under controlled conditions whenever possible and where appropriate. The amount of control will vary from context to context. However, in every case, the conditions of assessment must be controlled to some extent. Where the amount of control is low, the amount of authentication should rise. It is not acceptable to produce evidence in lightly controlled conditions with little authentication.

Authentication may take various forms including, but not limited to, oral questioning and plagiarism checks. Some forms of evidence generation (such as video recordings) have intrinsic authentication and would require no further means of verification. Where evidence is not generated under closely controlled conditions (for example, out of class) then a statement of authenticity should be provided by the learner to verify the work as their own, and also state any necessary sources and permissions.

Outcomes 2 and 3 may be assessed separately; however a holistic approach may be preferred with learners being given a single brief covering both Outcomes.

The assessment brief should be not be complex but should give the learner opportunity to produce graphics and a web page that covers all evidence required.

An assessor observation checklist could be used to record that the assessment tasks for Outcomes 2 and 3 have been undertaken correctly by the learner. An assessor should sign and date each learner's checklist.

If the Unit is being delivered as part of the NPA in *Web Design Fundamentals* at SCQF level 5 then it may be advantageous to assess the three mandatory Units in an integrated manner.

Opportunities for e-assessment

E-assessment may be appropriate for some assessments in this Unit. By e-assessment we mean assessment which is supported by Information and Communication Technology (ICT), such as e-testing or the use of e-portfolios or social software. Centres which wish to use e-assessment must ensure that the national standard is applied to all learner evidence and that conditions of assessment as specified in the Evidence Requirements are met, regardless of the mode of gathering evidence. The most up-to-date guidance on the use of e-assessment to support SQA's qualifications is available at **www.sqa.org.uk/e-assessment**.

National Unit Support Notes (cont)

Unit title: Computing: Website Graphics (SCQF level 5)

Opportunities for developing Core and other essential skills

This Unit will provide opportunities for learners to develop Core Skills in *Information and Communication Technology (ICT).*

Enterprise, employability and citizenship could also be incorporated depending on the nature of the brief for the creation of the graphics and webpage.

History of changes to Unit

Version	Description of change	Date

General information for learners

Unit title: Computing: Website Graphics (SCQF level 5)

This section will help you decide whether this is the Unit for you by explaining what the Unit is about, what you should know or be able to do before you start, what you will need to do during the Unit and opportunities for further learning and employment.

This Unit will introduce you to the main technical aspects of using graphics and digital images in websites. This will include learning about the uses of graphics and digital images in websites, the different graphic file formats and the appropriate use of each and how to optimise the graphics for quality and performance.

You will develop practical skills in creating graphics and optimising digital images and graphics for use in websites. You will learn how to create webpages incorporating graphics and upload and test the webpages to make sure they load quickly and the graphics display as expected.

To achieve this Unit you will be assessed on your ability to identify and describe the technical aspects of graphics, and carry out a practical assessment where you will create, upload and test web pages that include optimised graphics and digital images.

This Unit will provide you with opportunities to develop Core Skills in *Information and Communication Technology (ICT).* Depending on the nature of the brief you are given, you may also be able to demonstrate enterprise, employability and citizenship skills in the production of your webpages.

You do not need experience of creating web graphics before attempting this Unit, however it would be beneficial if you possessed basic digital literacy skills.

On completion of this Unit you will be able to:

1   Describe the technical aspects of website graphics and digital images.
2   Produce graphics for a given website brief.
3   Create a webpage with optimised digital images and graphics for a given brief.