



Information Literacy Framework for Wales

Finding and using information in 21st century Wales

Welsh Information Literacy Project, 2011



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1. Acknowledgements

We would like to thank the attendees of the Gregynog conference in 2009 who identified the need for this project. The development of this framework has also been greatly inspired by the National Information Literacy Framework (Scotland) which is available at: <http://www.gcu.ac.uk/ils/framework.html>

We have used SCONUL's revised Seven Pillars model as a structure for our framework and we are grateful to the SCONUL Information Literacy Working Group for their support, and in particular Moira Brent for sharing the research lens with us at an early stage.

Thank you also to the Open University Library in Milton Keynes for their Information Literacy Framework for Undergraduates and the Information Literacy Framework for Masters Level Students (draft) which have also informed this document.

Thank you, in particular, to the members of our Steering Group which represents all sectors in Wales, Cardiff University Information Services and CyMAL for their support in the development of this framework.

“Being able to use different ways of finding information and being able to judge whether the information is trustworthy or accurate is vital: it opens up choices, empowers us and can give us more confidence.”

(Welsh Information Literacy Project 2010)

2. Introduction

Libraries have a central role in information literacy delivery and development which is at the heart of independent learning. This functional framework is intended to provide a clear and integrated developmental structure for practitioners delivering information literacy at all levels. This will enable librarians, information literacy practitioners, teachers and trainers to support learners as they progress through levels of attainment. The framework is not however intended to be prescriptive or restrictive. It allows for some variation in information literacy emphasis across courses and subjects within the curriculum. It is not language specific and supports learning through the medium of Welsh and English. This document is intended for application exclusively in the Welsh national context.

The document consists of:

- An overview of the project and explanation of the information literacy model used
- An explanation of the relevant learning frameworks in operation in Wales
- A framework of information literacy which spans educational levels, including expected learning outcomes.

We do not propose that this framework should be adopted or incorporated in summative assessment marking criteria for any subject other than distinct information literacy units. It may, however, be used at the discretion of the teacher-librarian for formative assessment (assessment for learning) purposes. This framework merely provides a structure for development that should strengthen and direct information literacy provision so that it might better serve the interests of the learner.

Information literacy supports the national curriculum in a number of ways and can help develop independent learning skills, be it developing dictionary skills in language learning or correct handling of sources in history. Furthermore it also supports skills across the curriculum as demonstrated in Appendix A.

In the lifelong learning arena, information literacy is an essential element of digital inclusion which has fundamental social and economic impacts upon the individual in the modern world. An example of this is the development of critical evaluation skills which protects the user when dealing with information online. We believe that incorporating information literacy in subject based learning in both formal and informal settings is beneficial to the learner and we hope that this framework may support practitioners in libraries and classrooms in their work to develop these essential skills.

For an analysis of information literacy support for digital inclusion please refer to the Welsh Information Literacy Project's digital inclusion response document. For further details on the benefits of information literacy in Wales, how it is delivered and how it supports key political and educational drivers in Wales please see the information literacy current practice report. For evidence of information literacy in a range of educational and social contexts, spanning all age groups and geographical areas of Wales browse the range of case studies that we have gathered on the project website. All of these documents are available from our project website at:

<http://library.wales.org/information-literacy/>

3. Information Literacy

3.1 What is information literacy?

The Welsh Information Literacy Project has adopted the definition of information literacy provided by the Chartered Institute of Library and Information Professionals:

“Information literacy is knowing when and why you need information, where to find it, and how to evaluate, use and communicate it in an ethical manner”

(CILIP, 2004)

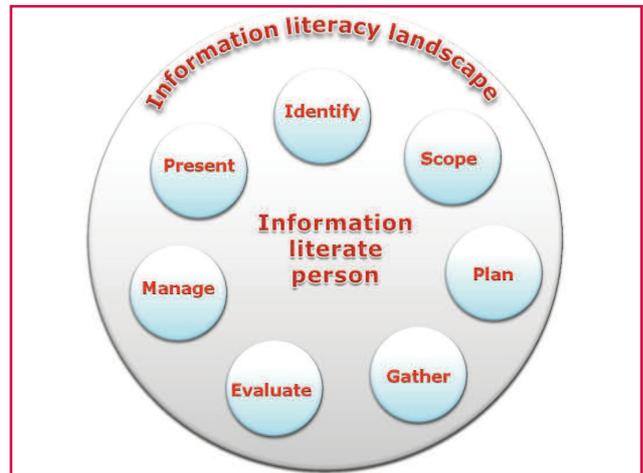
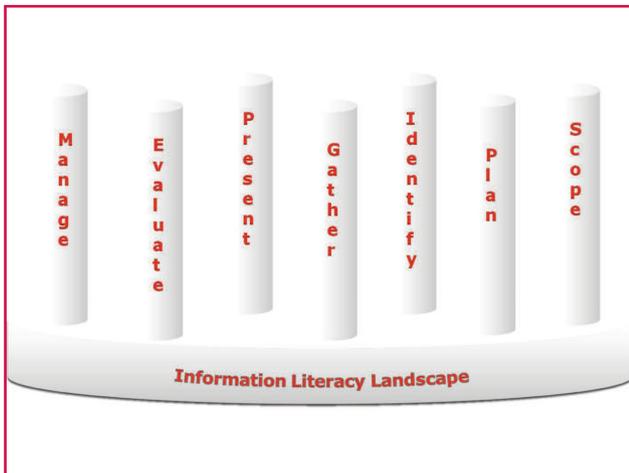
3.2 The Welsh Information Literacy Project

The Welsh Information Literacy Project has been initiated by librarians across Wales responding to the need for synchronicity and partnership in the field of information literacy. A conference of librarians from all sectors was held at Gregynog Hall in November/December 2009, and an action plan established. The project has now been sponsored by CyMAL: Museums Archives and Libraries Wales, a division of the Welsh Government and has buy-in from libraries across all sectors in Wales and the education community.

The conference and previous discussions identified that a national framework for information literacy is required to ensure a common understanding and to provide a reference point from which information literacy can be integrated into other strategies as appropriate.

3.3 SCONUL Information Literacy Pillars

There are several information literacy models which have been developed for specific environments. One of the most widely accepted of these in the UK is the Seven Pillars model developed by the Society of College, National and University Libraries (SCONUL) originally in 1999 and revised in 2011. The revised circular model (now a classical building with pillars representing each of the key information literacy competency areas) reflects the non-sequential way in which a person developing their information literacy might focus on competency areas that reflect their immediate information or task based needs rather than follow a specific order. The revised three dimensional model is shown overleaf from the side viewpoint and looking down from above.



(SCONUL, 2011a)

The SCONUL model will provide a core structure for this framework by categorizing information literacy learning objectives at each educational level. Each of the SCONUL pillars is listed below, with a description, adapted for our project where required.

Pillar	Meaning
Identify	Identify a personal need for information
Scope	Assess current knowledge and identify gaps
Plan	Construct strategies for locating information and data
Gather	Locate and access information and data they need
Evaluate	Review the research process and compare and evaluate information and data
Manage	Organise, synthesise and apply the information found
Present	Present the results of the research and disseminate it appropriately

4. Learning and Skills Development

It is vitally important that the framework takes into consideration all sectors from primary school to lifelong learning in the community as well as work based learning in order to provide a synchronized approach to information literacy. The development and application of information literacy skills are landmarks in every learning journey. Therefore this framework is structured as a sequential continuum for the sake of completeness and clarity. We recognize however that learning and skills development do not always happen in neat consecutive progression. They may follow an interactive or cyclical rather than linear progression. Learners may demonstrate higher spectrum skills in some areas whilst requiring more intensive support in other areas. Furthermore, an individual's information literacy level may not necessarily reflect the curriculum level at which they are studying. We recognize that one size does not fit all and that flexibility should be incorporated into the framework delivery.

4.1 Learning Frameworks in Wales

The information literacy framework for Wales aims to take into account the needs of learners throughout their lives and therefore two key educational frameworks must be brought together. These are the Skills Curriculum in Wales (3-19) and the Credit and Qualifications Framework for Wales (CQFW) (14+ years) which are discussed in depth below.

4.2 Skills Curriculum in Wales (3-19)

There is a very strong correlation between information literacy and the skills framework for 3-19 year olds in Wales. The skills curriculum is a non-statutory framework introduced in September 2008 by Department of Children, Education, Lifelong Learning and Skills.

It is a core element of the revised schools' curriculum in Wales and it is delivered across the primary, secondary and FE sectors. It is not subject specific and is integrated into the delivery of all curriculum areas (Welsh Government, 2008b).

The skills framework is divided into four key skill areas¹:

- Developing thinking across the curriculum (Plan, Develop and Reflect)
- Developing communication across the curriculum (Oracy, Reading and Writing)
- Developing ICT across the curriculum
- Developing number across the curriculum (Use mathematical information, Calculate and Interpret and present findings)

Appendix A demonstrates the integral role of information literacy in the skills curriculum by highlighting every learning objective for each skill area which directly relates to or supports information literacy. The following table gives an overview of this correlation.

Key skill	Total objectives	IL objectives	Supported by IL	Percentage IL related
Developing thinking: Plan	20	13	3	80%
Developing thinking: Develop	39	7	21	72%
Developing thinking: Reflect	21	7	10	81%
Developing communication: Oracy	11	1	4	45%
Developing communication: Reading	12	9	3	100%
Developing communication: Writing	11	5	6	100%
Developing ICT	19	19	0	100%
Developing number: Use	18	4	1	28%
Developing number: Calculate	12	1	6	58%
Developing number: Interpret and Present findings	18	10	8	100%

Discrete elements of information literacy are therefore integrated into the skills framework. The correlation is particularly apparent in the Developing ICT section (although it is also striking in many other areas).

¹The further three Wider Essential Skills Wales (Working with others, Improving own learning and Performance and Problem solving) are not included as separate sections in the current skills curriculum document but are integrated in the four areas mentioned above.

Developing ICT

1. Finding and developing information and ideas
 - a. Become aware that information exists in a variety of forms.
 - b. Begin to find different sources of information with support.
 - c. Begin to develop information and ideas, combining text and images.
 - d. Find suitable information from given sources using simple searches, to support a range of activities.
 - e. Develop/model information and ideas by processing data from given sources to support their activities in a range of subjects, and begin to ask questions about bias of information sources.
 - f. Find relevant information from a variety of sources using key word and multiple word searches on data files and internet sources.
 - g. Find different types of information from a range of ICT sources, including data files, DVDs, internet, and non-ICT sources, including written notes, lists, diagrams, selecting relevant information.
 - h. Identify suitable sources of information, search for information using multiple search criteria, and interpret and select what is needed for different purposes.
 - i. Develop/model information and ideas for specific purposes by processing data from a variety of sources, checking accuracy and plausibility of information
 - j. Develop and refine information, making informed judgments about its plausibility accuracy and relevance.
 - k. Derive new information on which to make judgments and draw conclusions.

2. Creating and presenting information and ideas
 - a. Become aware that ICT can be used to communicate ideas.
 - b. Use given ICT resources to help create, present and safely share their ideas, including text/word-banks, images
 - c. Create and present their ideas for a given purpose by combining different forms of information, including text, images, sound, with some sense of audience.
 - d. Safely share information with others, including the use of e-mail; virtual learning environments (VLEs).
 - e. Create and present information and ideas by combining a variety of different forms of information, including text, images, graphs, music files, with a developing sense of audience for their work.
 - f. Safely share different forms of information with others in appropriate ways, including the use of e-mail with attachments; virtual learning environments (VLEs).
 - g. Create and present information and ideas in consistent ways for different purposes by combining information from different sources, matching the needs of the audience.
 - h. Create and present information and ideas to meet the intended purpose and audience, selecting and using different layouts and techniques for different tasks.

(Welsh Government, 2008b)

The overt terminology (information literacy) is not used and therefore the connection is not always made with information literacy and libraries. Many schools are unaware of how libraries can support information literacy and the skills curriculum. This means that learners and teachers may miss out on support that is available to them. There are no figures on the number of schools or colleges in Wales which take advantage of library services in the delivery of the skills framework but there is certainly considerable scope for school libraries, college libraries, council based school library services and public libraries to support teaching staff in this area. By highlighting commonality, it is hoped that cooperation and partnership can be fostered and developed. Examples of information literacy supporting the skills curriculum are available in the form of case studies from the Welsh Information Literacy Project website.

Wales has the potential, through the skills curriculum, to benefit from enhanced information literacy. However, it must also be noted that not all aspects of information literacy are covered. For example, there is no coverage of referencing or plagiarism avoidance in the skills curriculum and whilst such content is not appropriate for the lowest age groups, it becomes increasingly important as learners progress.

In structure the skills curriculum is not overtly incremental by age group. However it does show progression (broadly linked to expectations at the beginning of the Foundation Phase, the end of that phase, the end of Key Stages 2, 3 and 4 and Post-16). The two final stages of the skills curriculum also directly map to CQFW Levels 1, 2 and 3. Learners who demonstrate the appropriate skills at these levels from the skills curriculum can get vital credit for their Welsh Baccalaureate.

4.3 Credit and Qualifications Framework for Wales (CQFW)

The CQFW has the scope to include all learning and training in Wales for the over 14s (with some overlap with skills curriculum as outlined above). It covers all environments and methods of delivery including classroom, work-based, full-time, part-time, distance-learning and online. It also encompasses all learning regardless of provider including schools, colleges, community education, employers, libraries, museums, arts organisations, higher education & voluntary bodies.

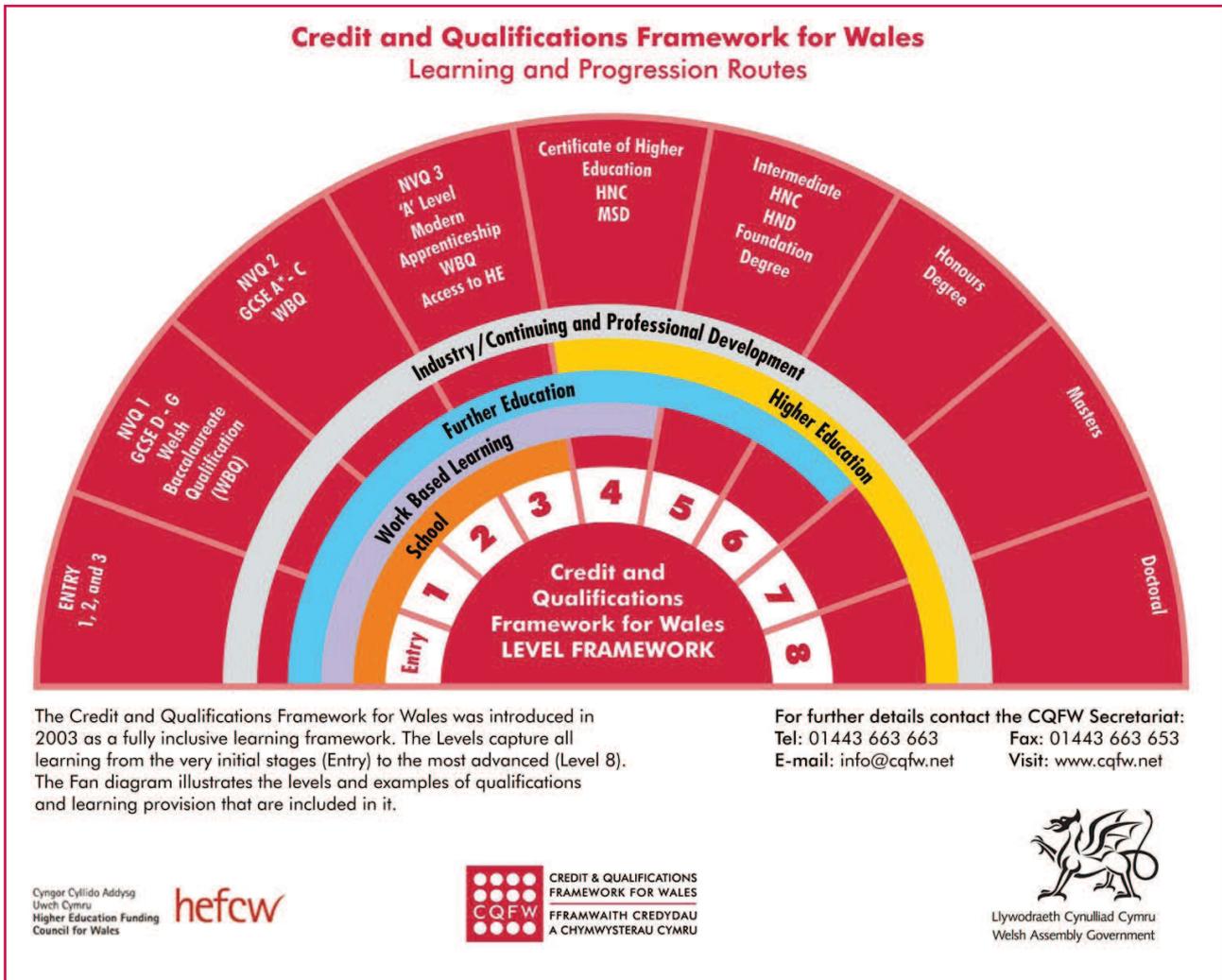
This structure was developed to provide a joined up vision of progress and development across all sectors of formal and informal learning in Wales. This framework spans from entry to doctoral level and does not assume any particular age or sector of delivery.

Although the CQFW supports accredited learning, the information literacy learning objectives are intended as guidelines and may be applied to formal or informal learning where required. This will help the information literacy provider to ensure that materials and teaching are suitable to meet the learners' needs.

Levels are shown in the fan diagram below. Sector delivery is indicated by the coloured bands which run across the levels. Orange indicates school, violet shows work based learning, further education is in blue, higher education is yellow and continuing professional development is shown in grey. As the diagram demonstrates, there is no single level which is exclusively delivered through one sector. This document will cover information literacy learning objectives for each level of the CQFW.

“From 2003 onwards all learning, including mainstream qualifications, offered in Wales is gradually being brought into a single unifying structure – the Credit and Qualifications Framework for Wales (CQFW). The framework merges the concepts of volume of learning achievements (credit) and the demands made by that learning on the learner (level) to create a system that is able to embrace all types and styles of learning, and all qualifications.”

(Welsh Government, 2010a)



The CQFW allows recognised bodies to apply credit to units of learning in these incremental levels. In addition to general and vocational qualifications (which are clearly mapped to CQFW levels 1, 2 and 3), additional recognition can be obtained for what was previously considered informal learning. All quality assured units have a credit value indicating the volume of learning required (one credit represents ten hours). If a learner completes a pre-determined combination of units they can receive the following qualifications:

- Award (1 - 12 credits)
- Certificate (13 - 36 credits)
- Diploma (37+ credits)

The learner may however choose to take units in isolation. All credits taken are ‘bankable’ meaning that learners may be able to use them to contribute to a full qualification by linking them with other units. Learners achievement for informal learning is also acknowledged.

5. Information Literacy in CQFW Levels

The following section is organized by CQFW levels. For each level there is a description and a table which gives information literacy learning objectives divided into sections for each SCONUL pillar. Where appropriate, elements of the skills curriculum are integrated into the corresponding levels.

5.1 Entry Level

Entry level is the first stage in the CQFW and it is divided into three categories:

- Entry Level 1
- Entry Level 2
- Entry Level 3

5.1.1 Entry Level 1

Learning objectives for this section have been partially derived from the National Information Literacy Framework (Scotland) Working Draft (Irving & Crawford, 2008) Information Literacy Level – Schools Skills and Student Assessment Checklist Items 31 Level A. This was adapted from City of Edinburgh’s EXPLORE Model (2006). Level A matches the expectations of the CQFW for entry level 1. Where appropriate, competencies from the Welsh skills curriculum (Welsh Government, 2008b) have been included (these have been marked with *).

“Entry 1 recognises progress along a continuum that ranges from the most elementary of achievements to beginning to make use of skills, knowledge or understanding that relate to the immediate environment”

(Welsh Government, 2010b)

Entry Level 1

Pillar	Learning Objectives
Identify	<ul style="list-style-type: none"> • Define the information needed • Start to frame simple questions on the topic • Begin to understand that some things are ‘fact’* • Brainstorm information already known
Scope	<ul style="list-style-type: none"> • Become aware that information exists in a variety of forms* • Identify common sources of information that can be accessed orally
Plan	<ul style="list-style-type: none"> • Identify the key words to locate in written sources • Choose from given options where to find information and ideas.* • Identify where specific information may be found • Frame simple questions for obtaining information • Identify, in response to questions, some basic success criteria for what is going to be done*
Gather	<ul style="list-style-type: none"> • Use questions to obtain information orally • Identify key information from simple texts • Listen and respond to others in familiar contexts, asking questions to obtain simple/specific information*
Evaluate	<ul style="list-style-type: none"> • Check that the information found is what was required • Begin to link outcomes to success criteria*
Manage	<ul style="list-style-type: none"> • Be able to make a decision using information obtained
Present	<ul style="list-style-type: none"> • Become aware that ICT can be used to communicate ideas* • Present information found • Use information for a specific purpose

5. 1.2 Entry Level 2

The learning objectives for this level have been partially derived from the National Information Literacy Framework for Scotland Working Draft by (Irving & Crawford, 2008) Information Literacy Level – Schools Skills and Student Assessment Checklist Items 31 Level B. This was adapted from City of Edinburgh’s EXPLORE Model (2006) Level B and matches the expectations of the CQFW for entry level 2. Where appropriate, competencies from the Welsh skills curriculum (Welsh Government, 2008b) have been included (these have been marked with *).

“Achievement at entry 2 reflects the ability to make use of skills, knowledge and understanding to carry out simple, familiar tasks and activities with guidance”

(Welsh Government, 2010b)

Entry Level 2

Pillar	Learning Objectives
Identify	<ul style="list-style-type: none"> • Define the information needed • Brainstorm information already known and areas of interest • Form a variety of questions about the topic
Scope	<ul style="list-style-type: none"> • Identify which information can be obtained orally and which may be paper based or electronic • List where oral and written sources of information may be found
Plan	<ul style="list-style-type: none"> • Indicate the keywords required for searching written information • Select potential resources • Prepare questions for obtaining information orally • List the steps to find information required
Gather	<ul style="list-style-type: none"> • Begin to find common sources of information • Recognize that some information sources can be accessed by using simple menus or indexes • Use a web browser to locate a pre-selected webpage • Locate a book in a pre-selected section or index • Use an index and table of contents • Decode text and begin to find simple information using organisational devices and available clues to deduce meaning* • Extract information from lists, tables, simple bar charts and diagrams • Use simple questions to gather information orally • Listen to the detail of responses
Evaluate	<ul style="list-style-type: none"> • Select relevant, and current information • Sort objects, using one or more criteria* • Identify if more information is needed
Manage	<ul style="list-style-type: none"> • Begin to develop information and ideas, combining text and images.* • Record information sources in a simplified format • Use information to make a decision
Present	<ul style="list-style-type: none"> • Use given ICT resources to help create, present and safely share their ideas, including text/word-banks and images*

5. 1.3 Entry Level 3

The learning objectives have been partially derived from the National Information Literacy Framework (Scotland) Working Draft (Irving & Crawford, 2008). This in turn uses the Information Literacy Level – Schools Skills and Student Assessment Checklist Items 31 Level C adapted from City of Edinburgh’s EXPLORE Model (2006). Level C matches the expectations of the CQFW for entry level 3. Where appropriate, competencies from the Welsh skills curriculum (Welsh Government, 2008b) have been included (these have been marked with *).

“Achievement at entry 3 reflects the ability to make use of skills, knowledge and understanding to carry out structured tasks and activities in familiar contexts, with appropriate guidance where needed.”

(Welsh Government, 2010b)

Entry Level 3

Pillar	Learning Objectives
Identify	<ul style="list-style-type: none"> • Define the information problem • Brainstorm known information and areas of interest about the topic
Scope	<ul style="list-style-type: none"> • Form a variety of questions about the topic with support • Identify gaps and begin to build on existing skills, knowledge and understanding required for the task* • Create a list of the information required • Identify general, reference, and people resources with support and guidance
Plan	<ul style="list-style-type: none"> • Suggest how to find relevant information and ideas* • Plan the process/method to be used* • Identify keywords most relevant for searching
Gather	<ul style="list-style-type: none"> • Use library catalogue to locate an item by keyword, author or title with guidance support • Find suitable information from given sources using simple searches, to support a range of activities* • Select best potential resources that are relevant, valid and current • Use questions to guide listening, viewing, and reading
Evaluate	<ul style="list-style-type: none"> • Link outcomes to success criteria* • Look for trends, inconsistencies, or missing information • Select relevant, understandable, current, and objective information with support
Manage	<ul style="list-style-type: none"> • Choose data from given information presented in a variety of numerical and graphical ways* • Record information sources with support and guidance • Safely share information with others, including the use of e-mail; virtual learning environments (VLEs)*
Present	<ul style="list-style-type: none"> • Read and interpret information from graphs with support and guidance • Paraphrase or summarize information with support and guidance • Use numeric sequencing (e.g. page numbers)

5.2 Level 1

The learning objectives have been partially derived from the National Information Literacy Framework (Scotland) Working Draft (Irving & Crawford, 2008). This in turn, uses the Information Literacy Level – Schools Skills and Student Assessment Checklist Items 31 Level D adapted from City of Edinburgh’s EXPLORE Model (2006). Level D matches the expectations of the CQFW level 1. Where appropriate, competencies from the Welsh Skills Curriculum (Welsh Government, 2008b) have been included (these have been marked with*).

“Achievement at level 1 reflects the ability to use relevant knowledge, skills and procedures to complete routine tasks. It includes responsibility for completing tasks and procedures subject to direction or guidance.”

(Welsh Government, 2010b)

Level 1: GCSE D-G, QCF Level 1 qualifications, Foundation Welsh Baccalaureate Qualification (WBQ)

Pillar	Learning Objectives
Identify	<ul style="list-style-type: none"> Define the information query Brainstorm information already known and its relevance Form a variety of questions about the topic
Scope	<ul style="list-style-type: none"> Organise ideas using mind-mapping or other technique Identify suitable information sources*
Plan	<ul style="list-style-type: none"> Identify and use appropriate keywords Determine success criteria* Suggest a range of options as to where and how to find relevant information and ideas* Suggest alternative processes/methods; identify the learning/thinking strategy to be used* Justify choice of success criteria* Outline task, and create a list and timeline of the steps. Create open ended questions for interviewing

Pillar	Learning Objectives
Gather	<ul style="list-style-type: none"> • Use formatting features, table of contents and index to find relevant information • Search selected information sources and find relevant information on topic • Use questions to guide listening, viewing, & reading • Find relevant information from a variety of sources using keyword and multiple word searches on data files and internet sources.* • Gather information in a variety of ways, including from questionnaires or databases* • Access and choose data from information presented in a variety of ways and from different sources*
Evaluate	<ul style="list-style-type: none"> • Identify commonalities, trends, inconsistencies, redundancies, or missing information • Consider evidence, information and ideas to begin to distinguish between ‘facts’, beliefs and opinions* • Begin to ask questions about bias of information sources* • Begin to recognise bias and reliability* • Recognise that some conclusions can be uncertain or misleading* • Begin to evaluate outcomes against success criteria* • Select relevant, understandable, current, objective and valid information • Decide whether the process/method was successful; describe any amendments made; suggest how the process/method could be improved*
Manage	<ul style="list-style-type: none"> • Read and interpret graphical information • Sort information by questions and integrate with prior knowledge • Make inferences, generalizations, and conclusions • Record information sources • Safely share different forms of information with others in appropriate ways, including the use of e-mail with attachments; virtual learning environments (VLEs)*
Present	<ul style="list-style-type: none"> • Create and present ideas for a given purpose by combining different forms of information, including text, images, sound, with some sense of audience* • Record, interpret and present data in charts, diagrams, tables and graphs. Label graphs and their axes appropriately*

5.3 Level 2

The learning objectives have been partially derived from the National Information Literacy Framework (Scotland) Working Draft (Irving & Crawford, 2008), Information Literacy Level – Secondary Schools / Further Education Colleges. The skills at this level of the Scottish framework were based upon SQA’s Information Handling Skills National Qualification and CILIP’s Information Literacy definition (CILIP, 2004). The Scottish framework document describes the general competency at this level as being able to “Use a few simple information skills to perform a familiar information task with guidance if required”. This matches the expectations of the CQFW level 2. Where in keeping with the CQFW definition of level 2 attainment, more advanced competencies from the Welsh skills curriculum (Welsh Government, 2008b) have been included (these have been marked with *).

“Achievement at level 2 reflects the ability to select and use relevant knowledge, ideas, skills and procedures to complete well-defined tasks and address straightforward problems. It includes taking responsibility for completing tasks and procedures and exercising autonomy and judgement subject to overall direction or guidance.”

(Welsh Government, 2010b)

Level 2: Foundation apprenticeship, QCF Level 2 qualifications, GCSE A*-C

Pillar	Learning Objectives
Identify	<ul style="list-style-type: none"> Define the selected information topic using recognised techniques such as mind mapping
Scope	<ul style="list-style-type: none"> Compare sources of information, include print, electronic and people resources Build on existing skills, knowledge and understanding required for the task* Identify multiple keywords relevant to the research question
Plan	<ul style="list-style-type: none"> Select potential resources that are valid, understandable, relevant, authoritative and current Arrange tasks and create a list and timeline of steps Choose how to obtain relevant information from different sources* Explain why the process/method and strategy have been selected and identify possible problems*

Pillar	Learning Objectives
Gather	<ul style="list-style-type: none"> • Find different types of information from a range of ICT sources, including data files, DVDs, internet, and non-ICT sources, including written notes, lists, diagrams, selecting relevant information.* • Get relevant information from different sources, including written and graphical material, and first hand by measuring or observing.*
Evaluate	<ul style="list-style-type: none"> • Begin to evaluate outcomes against criteria • Use a range of strategies to identify key points, ideas and lines of reasoning from a text.* • Consider different interpretations and distinguish between ‘facts’, beliefs and opinions, giving reasons* • Recognise that some interpretations can be misleading* • Identify and assess bias and reliability.* • Develop and refine information, making informed judgements about its plausibility, accuracy and relevance.* • Justify amendments/ improvements*
Manage	<ul style="list-style-type: none"> • Record and acknowledge sources of information using references • Develop and combine a variety of imaginative ideas, possibilities and alternatives.* • Sort information by questions and integrate with prior knowledge • Develop/model information and ideas for specific purposes by processing data from a variety of sources, checking accuracy and plausibility of information*
Present	<ul style="list-style-type: none"> • Communicate / share findings in a manner or format that is appropriate to the information, the intended audience and situation • Write clearly and confidently, presenting ideas and information appropriately.* • Create and present information and ideas in consistent ways for different purposes by combining information from different sources, matching the needs of the audience.* • Record and present gathered data in fully labelled formats, with titles, scales, axes and keys as appropriate* • Paraphrase or summarize information, using direct quotes when needed

5.4 Level 3

The learning objectives have been partially derived from the National Information Literacy Framework (Scotland) Working Draft (Irving & Crawford, 2008) Information Literacy Level at SQW Level 3. This in turn was based upon SQA's Information Handling Skills National Qualification. The Scottish framework document describes the general competency at this level as being able to use "basic information literacy skills and competences to undertake a simple information task". This matches the expectations of the CQFW level 3. Advanced competencies from the Welsh skills curriculum (Welsh Government, 2008b) have also been incorporated as appropriate (these have been marked with *).

“Achievement at level 3 reflects the ability to identify and use relevant understanding, methods and skills to complete tasks and address problems that, while well defined, have a measure of complexity. It includes taking responsibility for initiating and completing tasks and procedures as well as exercising autonomy and judgment within limited parameters. It also reflects awareness of different perspectives or approaches within an area of study or work”

(Welsh Government, 2010b)

Level 3: A Level Apprenticeship, Advanced WBQ Access to Higher Education

Pillar	Learning Objectives
Identify	<ul style="list-style-type: none"> Identify the selected information topic using recognised techniques such as mind mapping
Scope	<ul style="list-style-type: none"> Be aware that information may be available in a variety of mediums and forms including textual, numerical, people-based, graphical, images, audio or video Know the advantages and disadvantages of using different information sources
Plan	<ul style="list-style-type: none"> Plan and organise an information task Choose how to obtain relevant information from different sources.* Choose appropriate methods to get the results needed, including grouping data when appropriate.* Take account of possible problems when justifying why the strategy(ies) is to be used*
Gather	<ul style="list-style-type: none"> Search for information using multiple search criteria* Combine keywords using technique appropriate to search engine
Evaluate	<ul style="list-style-type: none"> Evaluate in order to gauge bias, reliability and validity.* Interpret and select information needed for different purposes.* Evaluate outcomes and how far success criteria fully reflect successful outcomes.* Evaluate information using evaluation criteria (Evaluate options)* Assess the process for effectiveness and efficiency* Refine success criteria in the light of experience for future occasions*
Manage	<ul style="list-style-type: none"> Record and acknowledge sources of information by citing and referencing Select, summarise and synthesise ideas and information.* Derive new information on which to make judgements and draw conclusions*
Present	<ul style="list-style-type: none"> Write coherently, presenting ideas and information logically and effectively. Create and present information and ideas to meet the intended purpose and audience, selecting and using different layouts and techniques for different tasks.* Select and use effective methods to illustrate findings, identify and show trends, and make comparisons*

5.5 Level 4

Learning objectives for this level of the CQFW have been partially derived from the Open University Information Literacy Levels Framework (Open University, 2010). They have also been informed by the National Information Literacy Framework (Scotland) Working Draft (Irving & Crawford, 2008) Information Literacy Level which equates to SCQF Level 4 / Intermediate 1. Skills in this level of the Scottish framework are based upon SQA's Information Handling Skills National Qualification. The Scottish framework document describes the general competency at this level as being able to use "information literacy skills and competences to undertake a straightforward information task". This matches the expectations of the CQFW level 4.

“Achievement at level 4 reflects the ability to identify and use relevant understanding, methods and skills to address problems that are well defined but complex and non-routine. It includes taking responsibility for overall courses of action as well as exercising autonomy and judgment within fairly broad parameters. It also reflects understanding of different perspectives or approaches within an area of study or work”

(Welsh Government, 2010b)

Level 4: Certificate of Higher Education, HNC

Pillar	Learning Objectives
Identify	<ul style="list-style-type: none"> • Use recognised techniques to clearly define the selected information topic (e.g. mind mapping). • Identify suitable information sources
Scope	<ul style="list-style-type: none"> • Articulate the key characteristics of different information types (e.g. print / electronic, primary / secondary, freely available / subscriber only / invisible web) as relevant to the subject or context • Identify a limited number of key sources of information in the subject area or context • Identify the 'knowledge gap' and what information is needed to fill it
Plan	<ul style="list-style-type: none"> • Know the advantages and disadvantages of using different information sources • Plan and organise a straight forward information task • Determine appropriate keywords including synonyms • Know how to adapt a search (e.g. broadening or narrowing by adding or removing keywords, or using different ones)
Gather	<ul style="list-style-type: none"> • Search selected information sources effectively to find relevant information on topic • Find an article or book from a reference • Review search results and identify appropriate changes for a similar future search • Find information in a variety of mediums. This might include people, textual, numerical, graphical, images, audio or video. • Use a number of text formats of information (e.g., books, journals, websites)
Evaluate	<ul style="list-style-type: none"> • Evaluate information using appropriate evaluation criteria • Reflect on the suitability of information found and consider strategies for improvement • Be able to use appropriate quality criteria to carry out initial filtering of material from searches
Manage	<ul style="list-style-type: none"> • Know what is meant by plagiarism • Be aware of the need to accurately record search results • Record details of sources of information used • Select, summarise and synthesise ideas and information
Present	<ul style="list-style-type: none"> • Reference information used correctly using an appropriate system • Communicate / share findings in a manner or format that is appropriate to the information, the intended audience and situation

5.6 Level 5

The learning objectives for this level are primarily derived from the Open University Information Literacy Levels Framework (Open University, 2010). They have also been informed by the National Information Literacy Framework (Scotland) Working Draft (Irving & Crawford, 2008) Information Literacy Level at SCQF Level 5 / Intermediate 2 (which used SQA's Information Handling Skills National Qualification). This matches the expectations of the CQFW level 5. The Scottish framework document describes the information literacy at this level as being able to use "information literacy skills and competences effectively to undertake an information task".

“Achievement at level 5 reflects the ability to identify and use relevant understanding, methods and skills to address broadly-defined, complex problems. It includes taking responsibility for planning and developing courses of action as well as exercising autonomy and judgement within broad parameters. It also reflects understanding of different perspectives, approaches or schools of thought and the reasoning behind them.”

(Welsh Government, 2010b)

Level 5: HND, Foundation Degree, Dip HE

Pillar	Learning Objectives
Identify	<ul style="list-style-type: none"> • Use a range of techniques to clearly define the selected information topic
Scope	<ul style="list-style-type: none"> • Identify suitable information sources • Use knowledge of key resources and their characteristics to independently select appropriate resources for the task as relevant to the subject or context
Plan	<ul style="list-style-type: none"> • Plan and organise an information task • Identify appropriate keywords • Recognise common search features across different databases and the web
Gather	<ul style="list-style-type: none"> • Use a search engine to locate information by keywords, Boolean operators, truncation, and special punctuation (+/-) • Search familiar and unfamiliar sources independently and confidently, refining the search as needed (e.g. broadening and narrowing)
Evaluate	<ul style="list-style-type: none"> • Use appropriate quality/evaluation criteria to evaluate a range of resources (e.g. books, articles, websites) effectively • Use appropriate quality criteria to filter results • Reflect on the suitability of information found and consider strategies for improvement
Manage	<ul style="list-style-type: none"> • Know what is meant by plagiarism and take appropriate steps to avoid it • Be aware of different systems available for managing references (e.g. social bookmarking tools, card index, diary, Refworks) • Record search results accurately • Select, summarise and synthesise ideas and information.
Present	<ul style="list-style-type: none"> • Produce an accurate list of references for common sources using the appropriate style • Communicate / share findings in a manner or format that is appropriate to the information, the intended audience and situation

5.7 Level 6

Learning objectives at Level 6 are mainly derived from the Open University Information Literacy Levels Framework (Open University, 2010). They have also been informed by the National Information Literacy Framework (Scotland) Working Draft (Irving & Crawford, 2008) Information Literacy Level for SCQF Level 6 / Higher. The Scottish framework describes the general competency at this level as “using information literacy skills and competences effectively and ethically to independently undertake an information task”. This matches the expectations of the CQFW level 6.

“Achievement at level 6 reflects the ability to refine and use relevant understanding, methods and skills to address complex problems that have limited definition. It includes taking responsibility for planning and developing courses of action that are able to underpin substantial change or development, as well as exercising broad autonomy and judgment. It also reflects an understanding of different perspectives, approaches or schools of thought and the theories that underpin them.”

(Welsh Government, 2010b)

Level 6: Graduate Certificate, Graduate Diploma, PGCE – QTS, Bachelor’s Degree, Bachelor’s Degree with Honours

Pillar	Learning Objectives
Identify	<ul style="list-style-type: none"> • Use a range of techniques to clearly define the selected information topic • Identify and frame problems or research questions
Scope	<ul style="list-style-type: none"> • Select and use a wide range of sources appropriate to the discipline, from the Library and beyond • Use knowledge of resources and their characteristics to independently select appropriate resources for the task • Be aware of sources of current information for keeping up to date and able to select and use those most appropriate to need
Plan	<ul style="list-style-type: none"> • Identify appropriate keywords • Plan and organise an information task • Recognise common search features across different databases and the web

Pillar	Learning Objectives
Plan	<ul style="list-style-type: none"> • Use a range of database functionality (e.g. truncation, phrase searching, date limits, combining search terms) within a single database • Identify a range of key sources of information in the subject area
Gather	<ul style="list-style-type: none"> • Independently carry out a subject search within a single database • Search selected information sources effectively to find relevant information on topic • Refine the search as needed by broadening and narrowing criteria • Interpret database results (e.g. bibliographic or full text), and use results functionality (e.g. sorting, saving, exporting) • Use judgment to appropriately adapt a search, including the decision to use a new database • Have experienced using a range of formats of information (e.g. bibliographic records, full text, abstracts)
Evaluate	<ul style="list-style-type: none"> • Review search results • Apply appropriate quality/evaluation criteria to critically evaluate information from any source to determine authority, bias, etc, which sometimes may be subtle to detect • Use appropriate quality criteria to filter results, and also to focus on the most relevant information within documents • review search results and identify appropriate changes for a similar future search
Manage	<ul style="list-style-type: none"> • Be aware of the range of tools and techniques for managing and exporting references (e.g. card index, Refworks) and able to select and use as appropriate • Demonstrate relationships between different pieces of information gathered and synthesise into a cohesive argument. • Understand the issues surrounding plagiarism and take appropriate steps to avoid it
Present	<ul style="list-style-type: none"> • Communicate / share findings in a manner or format that is appropriate to the information, the intended audience and situation. • Accurately and appropriately refer to the thoughts and ideas of others in your work • Use information found ethically and responsibly

5.8 Level 7

The information literacy learning objectives in this section have been informed by the Open University's Masters Level document. In this document they summarize attainment at this level as follows:

Information Literacy at Masters Level is characterized by increased levels of autonomy and self-direction. Students will need to use their creativity and originality as they begin to push the boundaries of existing knowledge in the subject area. They will be dealing with large volumes of data and will therefore need to develop effective strategies to filter and manage information. Students will need to reflect on the development of their information skills and their use of information to ensure that their competencies meet study requirements and their particular personal and career goals. (Open University, 2011)

Autonomy and independent judgment are therefore key to both definitions of attainment at level 7 in information literacy and in general academic standards.

“Achievement at level 7 reflects the ability to reformulate and use relevant understanding, methodologies and approaches to address problematic situations that involve many interacting factors. It includes taking responsibility for planning and developing courses of action that initiate or underpin substantial change or development, as well as exercising broad autonomy and judgment. It also reflects an understanding of relevant theoretical and methodological perspectives and how they affect their area of study or work “

(Welsh Government, 2010b)

Level 7: Post Graduate Certificate, PGCE – QTS, Postgraduate Diploma, Intergrated Masters Degree, Masters in Research, Masters Degree

Pillar	Learning Objectives
Identify	<ul style="list-style-type: none"> • Work independently to maintain an in-depth and up to date knowledge of your subject alongside a broader contextual knowledge • Understand how research information is generated and disseminated and be able to make effective use of research outputs
Scope	<ul style="list-style-type: none"> • Use a comprehensive range of sources in different media, including appropriate sources of specialised information (e.g. colleagues, archives, special collections, research networks, etc.)
Plan	<ul style="list-style-type: none"> • Have adopted a systematic approach to keeping up to date using the most appropriate tools and resources • Understand how databases work and apply this knowledge to carry out effective searches
Gather	<ul style="list-style-type: none"> • Search independently with confidence and fluency across information sources in any media (e.g. print, electronic) • Independently conduct a comprehensive search of the literature • Understand the concept of citation searching and use it effectively to retrieve information
Evaluate	<ul style="list-style-type: none"> • Apply critical appraisal skills, including the detection of bias, to own work and the work of others • Have developed a questioning attitude towards research outputs • Have developed personal criteria of what is relevant to your subject to filter large quantities of information
Manage	<ul style="list-style-type: none"> • Select the most appropriate system to manage a large volume of information • Synthesise from a range of diverse materials on complex subjects • Understand the issues surrounding plagiarism and take appropriate steps to avoid it
Present	<ul style="list-style-type: none"> • Select and use appropriate tools for sharing and communicating information (e.g. research networks, social bookmarking, blogging) • Understand and comply with the ethical and legal requirements surrounding the use and reuse of information and data • Construct a major bibliography and reference a range of materials using a recognized system

5.9 Level 8

Information literacy standards are most highly developed at level 8. As a result this section is in more detail than the earlier sections. The learning objectives in this section are taken from the document SCONUL Seven Pillars research lens (SCONUL, 2011b), which maps directly to the Research Development Framework (Vitae, 2010).

“Achievement at level 8 reflects the ability to develop original understanding and extend an area of knowledge or professional practice. It reflects the ability to address problematic situations that involve many complex, interacting factors through initiating, designing and undertaking research, development or strategic activities. It involves the exercise of broad autonomy, judgment and leadership in sharing responsibility for the development of a field of work or knowledge or for creating substantial professional or organizational change. It also reflects a critical understanding of relevant theoretical and methodological perspectives and how they affect the field of knowledge or work.”

(Welsh Government, 2010b)

Level 8: PhD, Professional Doctorate and DPhil (not typically credit based)

Pillar	Learning Objectives
Identify	<ul style="list-style-type: none"> • Understand knowledge and data is constantly being produced and that there is always more to learn • Understand that being information literate involves developing a learning/ research habit so new information is being actively sought all the time • Understand that ideas and opportunities are created by investigating/ seeking information • Understand the scale of the world of published and unpublished information and data available • Understand different disciplines place greater emphasis on different types of information and data • Understand the need for information will vary depending on the task at hand, the subject discipline and the stage of research • Identify a lack of knowledge in a subject area • Identify a research topic / question and define it using simple terminology • Articulate current knowledge on a topic • Recognise a need for information and data to achieve a specific end and define limits to the information need • Use background information to underpin the search • Take personal responsibility for a research project • Manage own time effectively to complete a research project
Scope	<ul style="list-style-type: none"> • Understand what types of information are available (e.g. data, people, written sources) • Understand characteristics of different types of information source (e.g. books, journals, data banks) and how they might be affected by format (digital, print) • Understand the processes for the dissemination of research outputs, including publication, in terms of how and why individuals make their research results known and the currency of information • Understand issues of accessibility (e.g. free/subscribed; license restrictions, electronic/print) • Understand what services are available to help and how to access them (eg different libraries, people, organizations, structures) • “Know what you don’t know” to identify any information gaps • Identify the types of information required (e.g. data, people, videos, published information) to meet the need • Identify the available search tools, such as general and subject specific resources at different levels • Identify different data collection methods • Identify different formats in which information may be provided (e.g. print, digital, multimedia) • Demonstrate the ability to use new tools as they become available

Level 8: PhD, Professional Doctorate and DPhil (not typically credit based)

Pillar	Learning Objectives
Plan	<ul style="list-style-type: none"> • Understand the range of searching techniques available for finding information. (e.g. discussing with peers, qualitative and quantitative research, browsing, data mining, active searching, serendipity) • Understand the differences between different search tools (e.g. bibliographic databases, subject gateways, search engines) and the need to be familiar with a range of different retrieval tools, recognizing advantages and limitations • Understand why complex search strategies can make a difference to the breadth and depth of information found • Develop approaches to searching such that new tools are sought for each new question (not relying always on most familiar resources) • The need to match data collection techniques to the circumstances • The need to revise keywords and adapt search strategies according to the resources available and / or results found • Understand the value of controlled vocabularies and taxonomies in searching • Scope the research question clearly and in appropriate language • Define a search strategy by using appropriate keywords and concepts, defining and setting limits (e.g. date, location, type of information) • Select the most appropriate search tools (people, search engines, databases etc.) and data collection techniques • Identify controlled vocabularies and taxonomies to aid in searching • Identify appropriate search techniques (eg from finding contents pages and indexes to complex data mining) • Identify specialist search tools appropriate to each individual information need
Gather	<ul style="list-style-type: none"> • Understand information and data is organised, digitally and in print sources (e.g. libraries) • Understand how libraries acquire and provide access to resources (e.g. print, multi-media, digital) including issues of authentication • Understand how digital technologies are providing collaborative tools to create and share information • Understand issues involved in collecting new data • Understand the different elements of a citation and how this describes an information resource • Understand the use of abstracts • Understand the need to keep up to date with new information • Understand the relevance of Open Access resources • Understand risks involved in operating in virtual environments (e.g. digital communication, visibility, confidentiality)

Pillar	Learning Objectives
Gather	<ul style="list-style-type: none"> • Understand the importance of appraising and evaluating search results • Use a range of different retrieval tools and resources effectively (e.g. databases, digital resources, other libraries) • Construct complex searches for use across a range digital and print resources: • Translate the search strategy to work in different resources • Redefine a search strategy based on previous result sets • Sort and manipulate results sets • Access full text information, both print and digital, read and download online material and data • Use appropriate research techniques to collect new data • Keep up to date with new information (e.g. email alerts, RSS feeds) • Engage with their scholarly community via networking, virtual communities, email lists • Use online and printed help and can find personal, expert help
Evaluate	<ul style="list-style-type: none"> • Understand the information and data landscape of their subject area and how their research fits in • Understand information and data landscape of the discipline and how their research fits in • Understand issues of quality, accuracy, relevance, bias, reputation and credibility relating to information and data sources • Understand the importance of consistency in data collection • Understand how the outputs of research are evaluated and disseminated, including the peer review process, publication, other forms of dissemination and research assessment • Understand the relevance of citation and bibliometrics to their research context • Distinguish between different information resources (e.g. web pages, scholarly, professional, trade & popular journals) • Choose a range of materials on topics, using appropriate criteria • Assess the quality, accuracy, relevance, bias, reputation and credibility of information resources • Read critically, identifying key points and arguments • Assess the credibility of the data gathered • Relate the information found to the original search strategy and their own research and adapt the search strategy as appropriate • Critically appraise and evaluate their own findings and those of others • Use citation metrics as an evaluative technique (e.g. citation counting, journal impact factors, h-index) Edit/ peer review the work of colleagues

Level 8: PhD, Professional Doctorate and DPhil (not typically credit based)

Pillar	Learning Objectives
Manage	<ul style="list-style-type: none"> • Understand the responsibility to act with professional integrity and to be honest in all aspects of research, especially information handling and dissemination (e.g. copyright, plagiarism and IP issues) • Understand the need to adopt appropriate data handling and curation methods • Understand the role they play in helping others in information seeking and management • Understand the need to keep systematic records, for example of: <ul style="list-style-type: none"> o search strategies and resources searched o resources found & resources used o research data • Understand the importance of sharing research data ethically without breaching data protection and informed consent of individuals • Understand the relevance of Freedom of Information to research activities • Understand the need to curate and archive research data ethically • Understand the importance of metadata • Understand the role of professionals, such as data managers and librarians, who can advise, assist and support with all aspects of information management • Use appropriate bibliographical software to manage information • Cite printed and electronic sources using suitable referencing styles • Create appropriately formatted bibliographies • Demonstrate awareness of issues relating to the rights of other researchers and research participants, including ethics, data protection, copyright, plagiarism and any other intellectual property issues • Set and meet standards of conduct for academic integrity • Identify data curation opportunities to ensure that research data is ethically stored for re-use in other projects • Use appropriate data management software and techniques to manage and curate research data • Make appropriate information available as required

Pillar	Learning Objectives
Present	<ul style="list-style-type: none"> • Understand the difference between summarising and synthesizing • Understand that different forms of writing/ presentation style can be used to present information to different communities • Understand that data can be presented in different ways • Demonstrate personal responsibility to share and curate information and data • Demonstrate personal responsibility to disseminate information & knowledge to their subject community and the wider world • Understand how research outputs will be peer reviewed, evaluated and disseminated • Understand the processes of publication and academic exploitation of research results • Understand the concept of attribution, especially in relation to citation and co authorship • Understand that researchers can take an active part in the creation of information through traditional publishing and digital technologies (e.g. blogs, wikis) • Use the information and data found to address the research question • Summarise documents and reports verbally and in writing • Analyse and present data appropriately • Incorporate new research findings into the context of existing knowledge/ See connections between sections of own data and the literature • Synthesise and appraise new and complex information from different sources • Communicate effectively using appropriate writing styles in a variety of formats (e.g. abstract, literature review, scientific report, journal article, poster, conference paper, visually, Web 2.0) • Communicate effectively verbally (e.g. conference presentation, seminar) • Select appropriate publications and dissemination outlets in which to publish research findings and data • Use open access as well as traditional publishing routes • Develop a personal profile in the scholarly community using appropriate personal and digital technologies (e.g. discussion lists, social networking sites, blogs, etc.)

6. Information Literacy for Life

The information literacy framework is intended to support learners throughout their lives and to be comprehensive whilst remaining flexible. We recognize that the volume of information available is ever growing and the mediums through which it is available are evolving. Therefore information literacy cannot be seen as something to be addressed once and then ignored. It is an integrated part of lifelong learning which must be recognised, enhanced and continually updated.

An example of this can be seen in the world of work where information literacy is achieving new recognition in knowledge based professions. The Royal College of Nursing, for example, recently published information literacy professional competency standards recognizing that information literacy is integral to modern professional standards. “The drive for evidence-based practice within health care and the recent trend towards eHealth, is dependent on staff being able to handle information effectively, by maintaining standards in their own practice, and by supporting the informed patient.” (RCN, 2010).

This framework is the first step towards a national coordinated approach to information literacy in Wales. This approach is integrated with other national frameworks in Wales so that it can support learning throughout life. We hope that it will provide a clear and progressive structure which encourages achievement and inclusion. This in turn will benefit the individual and society as Wales becomes an information literate nation.

“Being able to use different ways of finding information and being able to judge whether the information is trustworthy or accurate is vital: it opens up choices, empowers us and can give us more confidence. Empowering individuals to seek, find and use the information they need to help them achieve their goals fosters an information literate population. This can lead to social and economic benefits for the Welsh nation.”

(Welsh Information Literacy Project, 2010)

7 Appendix A: Skills Curriculum and Information Literacy

The structure below reflects the skills curriculum document (Welsh Government, 2008b) and shows expected capabilities and levels of proficiency incrementally from left (lower) to right (higher). Cells are highlighted in **blue** where they directly relate to information literacy and highlighted in **Grey** where information literacy can provide support.

7.1 Developing thinking across the curriculum (Plan, Develop, Reflect)

		Plan				
Asking Questions Activating prior skills, knowledge and understanding Gathering information Determining the process/method and strategy Determining success criteria	Ask why, what, how, where, when, etc.	Ask relevant questions and begin to link questions into sequences. Give reasons for choice of questions.	Ask questions that build on responses to earlier questions.	Ask more probing questions.	Identify the problem and set the questions to resolve it.	
	Show awareness of personal needs and skills.	Identify gaps and begin to build on existing skills, knowledge and understanding required for the task.	Build on existing skills, knowledge and understanding required for the task.	Evaluate options.		
	Choose from given options where to find information and ideas.	Suggest how to find relevant information and ideas.	Suggest a range of options as to where and how to find relevant information and ideas.			
	Choose from given options what to do and how to do it.	Plan the process/method to be used.	Suggest alternative processes/methods; identify the learning/thinking strategy to be used.	Explain why the process/method and strategy have been selected and identify possible problems.	Take account of possible problems when justifying why the strategy(ies) is to be used.	
	Identify, in response to questions, some basic success criteria for what is going to be done.	Determine success criteria and give some justification for choice.	Justify choice of success criteria.			

Develop						
Generating and developing ideas	Show curiosity and explore everyday stimuli.	Generate imaginative ideas and possibilities.	.Develop and begin to combine a variety of imaginative ideas, possibilities and alternatives, including those of others.	Develop and combine a variety of imaginative ideas, possibilities and alternatives.		
Valuing errors and unexpected outcomes	Show surprise at unexpected outcomes.	Describe errors and unexpected outcomes.	Begin to make use of errors and unexpected outcomes.	Make use of errors and unexpected outcomes.	Value errors and unexpected outcomes and see the opportunities they present.	Build on unexpected outcomes as well as successes to re-evaluate.
Entrepreneurial thinking	Favour the familiar when presented with new ideas.	Begin to experiment with own and others' ideas.	Experiment confidently with own and others' ideas.	Begin to take risks with ideas, going beyond the conventional.	Take calculated risks with ideas, weighing up potential pros and cons.	
Thinking about cause and effect and making inferences	See simple links between cause and effect in everyday routines; make and try out simple predictions.	Identify links between cause and effect; give reasons for inferences/ predictions.	Use some prior knowledge to explain links between cause and effect or justify inferences/ predictions.	Use prior knowledge to explain links between cause and effect and justify inferences/ predictions.		
Thinking logically and seeking patterns	Identify obvious observed differences.	Identify and describe similarities and differences by making simple comparisons.	Identify, describe and begin to explain patterns and relationships.	Explain patterns and relationships and identify uncertainties.	Analyse patterns and explore uncertainties.	

Develop							
<p>Considering evidence, information and ideas</p> <p>Forming opinions and making decisions</p> <p>Monitoring progress</p>	<p>Begin to understand that some things are 'fact'.</p>	<p>Consider evidence, information and ideas to begin to distinguish between 'facts', beliefs and opinions.</p>	<p>Consider different interpretations and distinguish between 'facts', beliefs and opinions, giving reasons. Begin to recognise bias and reliability.</p>	<p>Identify and assess bias and reliability. Consider others' views to inform opinions and decisions.</p>	<p>Evaluate in order to gauge bias, reliability and validity.</p>		
	<p>Begin to express own opinions and make decisions in everyday routines.</p>	<p>Form opinions and make decisions by weighing up some pros and cons.</p>	<p>Form considered opinions and make informed decisions.</p>	<p>Regularly check progress, making ongoing revisions to process/method where necessary.</p>	<p>Take different perspectives to inform opinions and decisions.</p>		
	<p>With support, follow the chosen process/method.</p>	<p>Follow the planned process/method.</p>	<p>Follow the planned process/method, making some amendments where necessary.</p>	<p>Justify any amendments.</p>			

Reflect	
Reviewing outcomes and success criteria	<p>Begin to link outcomes to success criteria</p> <p>Link outcomes to success criteria.</p> <p>Begin to evaluate outcomes against success criteria.</p> <p>Evaluate outcomes and how far success criteria fully reflect successful outcomes.</p> <p>Refine success criteria in the light of experience for future occasions.</p>
Reviewing the process / method	<p>Show or describe some of what has been done; identify, in response to questions, what worked and what didn't.</p> <p>Identify what worked and what didn't; begin to suggest how the process/method could be improved.</p> <p>Decide whether the process/method was successful; describe any amendments; suggest how the process/method could be improved.</p> <p>Justify amendments/improvements.</p>
Evaluate own learning and thinking	<p>Show, in response to questions, some of what has been learned/found out</p> <p>Describe what has been learned/found out.</p> <p>Describe how they have learned, and identify the ways that worked the best.</p> <p>Identify the learning/thinking strategies they have used.</p> <p>Justify the learning/thinking strategies used and suggest other strategies that might have worked.</p> <p>Evaluate and refine learning and thinking strategies for future occasions.</p>
Linking and lateral thinking	<p>Make links between everyday routines in different contexts.</p> <p>Link the learning, with support, to other situations.</p> <p>Link the learning to similar situations, within and outside school.</p> <p>Link the learning to dissimilar but familiar situations, within and outside school.</p> <p>Link the learning to unfamiliar or more abstract situations.</p> <p>Integrate the learning and link it to more abstract situations.</p>

7.2 Developing communication across the curriculum (Oracy, Reading, Writing)

Oracy	
Develop information and ideas	<p>Listen and respond to others in familiar contexts, asking questions to obtain simple/specific information.</p> <p>Show an awareness of the needs of the listener, asking questions and responding to the contributions of others.</p> <p>Show an increasing awareness of the social conventions of discussion and conversation, contributing and responding appropriately.</p> <p>Listen to the contributions of others, considering their points of view. Be flexible in discussions and respond aptly to what they hear.</p> <p>Listen carefully, noting the strengths and weaknesses of viewpoints or lines of reasoning and show adaptability. Make significant contributions to discussions.</p> <p>Listen perceptively, evaluating the strength of arguments and the thinking of others, identifying key messages. Make significant contributions to discussions, taking a range of roles and helping to move discussions forward.</p>
Presenting information and ideas	<p>Talk to themselves and to others and understand many more words than they can speak. Use simple vocabulary to convey meaning.</p> <p>Communicate with increasing confidence to peers and others. Begin to modify their talk to the requirements of the audience, using a growing vocabulary.</p> <p>Communicate clearly and confidently in a way that suits the subject, audience and purpose, using a range of vocabulary, including some key words related to subjects.</p> <p>Communicate clearly and effectively in a way that suits the subject, audience and purpose. Use a wide and subject-specific vocabulary.</p> <p>Communicate coherently, engaging the interest of listeners. Use appropriate language forms.</p>

Reading	
<p>Locating, selecting and using information using reading strategies</p>	<p>Begin to differentiate between print and pictures. Decode text and begin to find simple information using organisational devices</p>
	<p>Decode text and begin to find simple information using organisational devices and available clues to deduce meaning.</p>
	<p>Use a range of word identification skills and different strategies to locate ideas and reorganise information from different sources.</p>
	<p>Use different reading strategies to locate, select and summarise information, identifying accurately the key points.</p>
	<p>Use a range of strategies to identify key points, ideas and lines of reasoning.</p>
	<p>Select, summarise and synthesise ideas and information.</p>
<p>Responding to what has been read</p>	<p>Look at texts with/without an adult, showing interest or enjoyment.</p>
	<p>Respond to what is read, expressing opinions about major events or ideas and making connections between reading and own experiences.</p>
	<p>Confirm their understanding by responding to texts orally and/or in writing, and taking into account the opinions of others.</p>
	<p>Discuss and evaluate texts, using inference and deduction where necessary and considering the interpretations of others.</p>
	<p>Discuss and show appreciation of texts, evaluating the writer's techniques.</p>
	<p>Discuss texts, showing appreciation both of the text itself and of a range of interpretations.</p>

Writing					
<p>Organising ideas and information</p>	<p>Write short creative and factual passages. Check work and sometimes correct errors.</p>	<p>Plan, organise and present ideas and information. Improve writing by redrafting.</p>	<p>Plan, organise and present ideas and information. Proofread and revise writing.</p>	<p>Write clearly and confidently, presenting ideas and information appropriately. Proofread, edit and revise work.</p>	<p>.Write coherently, presenting ideas and information logically and effectively.</p>
	<p>Experiment with a variety of instruments on paper and/or other materials.</p>	<p>Choose words for variety and interest and spell simple words correctly/in a phonetically plausible way. Use simple punctuation and sentence structure.</p>	<p>Choose words to create effects. Choose an appropriate form, sequence and layout to suit audience and purpose. Spell most common words accurately, using a range of punctuation and sentence structures to enhance meaning.</p>	<p>Write effectively to suit audience and purpose, choosing appropriate vocabulary, punctuation and sentence structure. Spell accurately.</p>	<p>Write effectively, choosing from a repertoire of vocabulary and sentence structures, matching style to audience and purpose. Spell and punctuate accurately.</p>
<p>Writing accurately</p>					

7.3 Developing ICT across the curriculum

ICT Skills Framework						
Finding and developing information and ideas	Become aware that information exists in a variety of forms.	Begin to find different sources of information with support.	Find suitable information from given sources using simple searches, to support a range of activities.	Find relevant information from a variety of sources using key word and multiple word searches on data files and internet sources.	Find different types of information from a range of ICT sources, including data files, DVDs, internet, and non-ICT sources, including written notes, lists, diagrams, selecting relevant information.	Identify suitable sources of information for information using multiple search criteria, and interpret and select what is needed for different purposes.
	Begin to develop information and ideas, combining text and images.	Develop/model information & ideas by processing data from given sources to support their activities in a range of subjects, & begin to ask questions about bias of information sources.	Develop/model information and ideas for specific purposes by processing data from a variety of sources, checking accuracy and plausibility of information.	Develop and refine information, making informed judgements about its plausibility, accuracy and relevance.	Derive new information on which to make judgements and draw conclusions.	
	Become aware that ICT can be used to communicate ideas.	Use given ICT resources to help create, present and safely share ideas, including text/word-banks, images.	Create and present their ideas for a given purpose by combining different forms of information, including text, images, sound, with some sense of audience.	Create and present information and ideas by combining a variety of different forms of information, including text, images, graphs, music files, with a developing sense of audience for their work.	Create and present information and ideas in consistent ways for different purposes by combining information from different sources, matching the needs of the audience.	Create and present information & ideas to meet the intended purpose & audience, selecting and using different layouts and techniques for different tasks.
Creating and presenting information and ideas		Safely share information with others, including the use of e-mail; virtual learning environments.	Safely share different forms of information with others in appropriate ways, including the use of e-mail with attachments; virtual learning environments.			

ICT Skills Framework						
Using numbers	Use numbers and role play.	Use whole numbers in practical situations; use fractions in the context of simple shape. Recognise and use coins of different values.	Use decimals in the context of money and measures; use Negative numbers in the context of temperature; use fractions and percentages to estimate, describe and compare proportions of a whole in practical contexts.	Use ratio and proportion in practical contexts, including currency exchange rates, value for money and scale drawings.	Use whole numbers, decimals, fractions, percentages, negative numbers, ratio and proportion in a variety of ways in practical contexts, including scale drawings, maps and plans.	Read and understand ways of writing very small and very large numbers.
	Compare two or more objects by direct comparison of physical properties.	Measure and compare length and mass; order events in time.	Choose and use everyday units of measure and familiar measuring equipment; read scales to an appropriate degree of accuracy.	Use more precise measuring equipment with finer calibrations. Make reasonable estimates of a range of measures in everyday situations. Use correct units for compound measures such as volume, density or speed.	Read scales on a range of measuring equipment to given levels of accuracy.	Make accurate and reliable observations choosing suitable equipment; measure in a variety of appropriate units.
Gathering Information	Count a small number of objects.	Collect data systematically by counting and by measuring. Read, understand and extract data presented in lists, tables, charts, simple graphs and diagrams.	Gather information in a variety of ways, including from questionnaires or databases. Choose data from given information presented in a variety of numerical and graphical ways.	Recognise the difference between, and the implications for, gathering discrete and continuous data. Access and choose data from information presented in a variety of ways and from different sources.	Get relevant information from different sources, including written and graphical material, and first hand by measuring or observing.	Choose how to obtain relevant information from different sources.

7. 4 Developing number across the curriculum
(Use mathematical information, Calculate, Interpret and Present)

Calculate	
Using the number system	<p>Join in with familiar number rhymes and songs.</p> <p>Choose the appropriate operations when solving addition and subtraction problems.</p> <p>Recognise the number operations needed to solve problems. Order large numbers to develop an awareness of size/magnitude and chronology.</p> <p>Order negative numbers and decimals.</p> <p>Identify suitable calculations to get the results needed for the task. Convert measurements between systems, e.g. currencies and mass.</p> <p>Choose appropriate methods to get the results needed, including grouping data when appropriate.</p>
Using a variety of methods	<p>Begin to use the concept of 'more'. Match pairs of related objects or pictures.</p> <p>Use a variety of mental strategies to add and subtract small numbers.</p> <p>Use a variety of methods of mental, written and calculator computation; solve numerical and practical problems, approximating or estimating as appropriate; check that the results make sense by referring to the size of numbers or the context..</p> <p>Check the accuracy of results using mental estimation, approximation and inverse operations to decide whether or not the results make sense.</p> <p>Work to the level of accuracy required. Check calculations using different methods to make sure that they make sense. Use formulae to calculate in practical and everyday situations.</p> <p>Carry out calculations involving two or more steps, with numbers of any size, with and without a calculator. Check methods and results to identify and correct any errors. Show clearly methods of carrying out calculations and give the level of accuracy of the result.</p>

Interpret and present findings	
Talking about and explaining work	<p>Talk about or show an awareness of activities involving number.</p> <p>Use the language of position (including coordinates and compass points) and movement, data and measures when talking about work.</p> <p>Use the language of number, shape and comparatives, and the symbols for addition, subtraction, multiplication and division when talking about work.</p> <p>Use correct mathematical language, symbols and notation when presenting work.</p> <p>Use mathematical terminology and notation correctly when describing and explaining methods and findings.</p> <p>Describe results, highlighting main findings and explaining how they meet purpose.</p>
Comparing data	<p>Match objects or pictures; sort objects according to a given criterion</p> <p>Sort objects, using one or more criteria.</p> <p>Describe and compare sets of discrete data, using the mode, mean, median or range as appropriate.</p> <p>Compare two sets of continuous data.</p> <p>Use basic ideas of correlation to determine the interdependence of two variables.</p> <p>Compare sets of data in a variety of situations, using percentage, range, mean, mode and median as appropriate.</p>
Recording and interpreting data and presenting findings	<p>Record numbers initially by making marks or drawing pictures.</p> <p>Record, interpret and present data in simple tables, lists, pictograms, charts, graphs and diagrams.</p> <p>Record, interpret and present data in charts, diagrams, tables and graphs. Label graphs and their axes appropriately. Recognise that some conclusions can be uncertain or misleading.</p> <p>Choose from, construct and interpret a variety of methods of presenting data, including pie charts, scatter graphs, line graphs. Recognise that some interpretations can be misleading.</p> <p>Record and present gathered data in fully labelled formats, with titles, scales, axes and keys as appropriate.</p> <p>Select and use effective methods to illustrate findings, identify and show trends, and make comparisons.</p>

9 Glossary of Abbreviations

The following table shows a list of abbreviated terms alongside their full meanings.

Term	Meaning
CILIP	Chartered Institute of Library and Information Professionals
CyMAL	Museums Archives and Libraries in Wales
CQFW	Credit and Qualifications Framework for Wales
DCELLS	Department for Children, Education, Lifelong Learning and Skills.
ICT	Information Communication Technology
IL	Information Literacy
IT	Information Technology
KS2	Keystage 2
KS3	Keystage 3
OU	Open University
RCN	Royal College of Nursing
RDF	Researcher Development Framework
SCONUL	Society of Colleges, National and University Libraries

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