

MODULE HANDBOOK

ECAD4006

**ESDGC, Science and the wider
Curriculum**

**BA PRIMARY EDUCATION
with Qualified Teacher Status**

LEVEL 4

YR ATHROFA

2018-2019

1. Points of contact

If you need to discuss anything relating to the module contact:

Module Co-ordinator:

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2. Our expectations

We hope that you will enjoy the module and programme and are here to help. You should:

- Make good use of the University facilities and resources
- Attend and participate in sessions
- Act responsibly
- Meet assignment deadlines
- Engage and Participate in all sessions

Please read the University Regulations for Students.

AIM(S)

- To develop students' knowledge, understanding and skills in teaching Education for Sustainable Development and Global Citizenship (ESDGC) in the primary school, with a particular focus on scientific contexts.

LEARNING OUTCOMES

By the end of this module trainees should be able to:

- Demonstrate knowledge and understanding of the rationale and curriculum guidance for teaching ESDGC in the primary curriculum in Wales
- Recognise the particular contribution of science and the wider curriculum in promoting ESDGC and the 'four purposes of the Curriculum in Wales'
- Plan effectively for the teaching of ESDGC in science, cross-curricular themes and wider curriculum contexts
- Identify and evaluate appropriate learning and teaching strategies (pedagogies) for promoting ESDGC through science and the wider curriculum.

You will find in this handbook a list of activities to undertake – some individually, others as a group. **It is strongly recommended that you do these and keep a notebook as evidence of your work.** You might want to submit this as an appendix for your assignment.

Visit to the National Botanical Garden of Wales

- National Botanic Garden of Wales, Llanarthne, Carmarthenshire.

<http://www.gardenofwales.org.uk>

Rationale of visit

The local/national environment and/or contrasting locality can be a rich resource for teaching across the curriculum. Giving a local/national focus to your work, not only in history and geography but also in other subject areas such as Science, can stimulate pupils to produce exciting and original work. As a teacher you might want to explore issues which affect the local community/region/contrasting locality/country and in doing so you can involve children in weighing evidence, listening to opinions, and making and justifying decisions – to develop their capacity to become critical thinkers. The National Botanic Garden of Wales is an example of a suitable context for developing cross-curricular skills and themes, especially themes linked to Education for Sustainable Development and Global Citizenship (ESDGC), e.g. climate change, the natural environment, choices and decisions.

☺ Moment to reflect: think about what these learning outcomes (p.3) mean to you. Can you put them into your own words and explain them to a friend? How might a visit to the National Botanic Garden of Wales help you to meet these learning outcomes?

✍ Learning Outcome 1:

These are some of the standards addressed in this module:

To qualify as a teacher, you need to demonstrate achievement of the standards for Qualified Teacher Status (17/09). This module will help you towards achieving these standards.

S2.1 They have a secure knowledge and understanding of the subject(s) they are trained to teach.

S2.2 They know and understand the National Curriculum aims and guidelines especially: they understand that, in Wales, pupils should be given opportunities, where appropriate, to develop and apply their knowledge and understanding of the cultural, economic, environmental, historical and linguistic characteristics of Wales (the Curriculum Cymreig); they are familiar with the most recent national guidance on the promotion of Education for Sustainable Development and Global Citizenship.

S3.1 Planning, expectations and targets S3.3.15 They take appropriate opportunities to promote and teach education for sustainable development and global citizenship in all relevant aspects of their teaching.

☺☐ Moment to reflect: How do the learning outcomes of the module help you to achieve these standards? How could you use this assignment to contribute to your Professional Development Profile (PDP)?

 Standard S2.1

Introduction to the National Botanic Garden of Wales

The National Botanic Garden of Wales (NBGW) is located 2 ½ km to the south-east of the small village of Llanarthne on the edge of the Tywi valley in Carmarthenshire, Wales. The garden is both a visitor attraction and a centre for botanical research and conservation. It features the world's largest single-span glasshouse measuring 110m (360ft) long by 60m (200ft) wide. The NBGW website states that the NBGW seeks:

'to develop a viable world-class national botanic garden dedicated to the research and conservation of biodiversity and its sustainable utilisation, to lifelong learning and to the enjoyment of the visitor'

www.gardenofwales.org.uk

The National Botanic Garden of Wales is the first new botanic garden to be built in Britain for over 100 years. The designers have made sure that it is an ecologically friendly garden with many important features, for example:

- collecting and recycling water all over the site
- burning waste to heat the glasshouse and visitor buildings
- treating all of the sewage on site using a reed bed system

What does a botanic garden do?

Plants are very important to humans. They provide us with many things we need for our everyday lives: food, materials to make clothing, paper, furniture and buildings, medicines and oxygen. They are important in the balance of nature, and all food chains starts with plants. This means that humans and all other animals depend on plants to stay alive.

In a botanic garden there are thousands of different types of plants from all over the world. They are available for people to see, and to find more about what they are and why they are important. Some of the plants come from parts of the world where their habitat is threatened, so they are at risk of becoming extinct. There is a huge glasshouse in the Botanic Garden of Wales so that we can grow plants from warmer climates than Wales, for example Australia, South Africa.

Scientists work at the Botanic Garden to carry out research and find out more about the plants. It is important to know what conditions the plants need to survive, and to find out which plants can be of most use to humans. There are many plants growing in the wild that have not been studied in this way yet. This includes many plants from Wales, as well as other parts of the world.

There is an education centre at the Garden so that people of all ages can find out about why plants are important to us. Special days are arranged for school pupils, students at colleges and universities, and courses for adults are also arranged. For primary schools, the NGBW has a wide range of programmes which have an emphasis on:

- hands on active learning discovery
- cross curricular learning
- ESDGC (supporting out of classroom learning)
- STEM (science, technology, engineering and mathematics)

Task: Visit the National Botanic Garden of Wales website www.gardenofwales.org.uk and make a list of suitable activities that would promote pupils' understanding of ESDGC, Science and the wider curriculum in the Foundation Phase and KS2, e.g. Tedwen's adventure, Fairtrade fortnight, etc.

What is the National Botanic Garden of Wales like?

The National Botanic Garden of Wales has been built in the gardens and parklands of the former Middleton Hall, Carmarthenshire. The lakes, ponds, waterfalls and woodlands of the eighteenth century estate remain and twenty-one of its historic features have been repaired, restored or rebuilt. There are many interesting features to attract visitors to the garden including the following eight features:

1. Millennium Square
2. The Walled Garden
3. The Broadwalk
4. The Water Discovery Centre
5. Biomass Centre
6. The Nursery

7. The Rocks of Wales
8. The Great Glasshouse

Task: Browse the Garden's website on www.gardenofwales.org.uk to find out more about the features of the garden.

It is hoped this wonderful site will stimulate your imagination as future teachers, to see the potential for using a garden/museum/local/regional area as a context for teaching the Foundation Phase and KS2 curriculum.

What you need to do?

In preparation for this module you will need to:

- undertake research on the National Botanic Garden of Wales and familiarize yourself with the ESDGC themes
- support each other by sharing, challenging and evaluating ideas

Useful things to bring along

- sketch book
- note pad
- mobile phone/camera
- tape measure
- coloured pencils/highlighters, etc.
- mobile phone/dicta-phone for recording discussions/viewpoints

● During the visit, make sure you maximise your time. Ensure that you gain a general feel for the place. Look around the grounds as well as the old buildings.

Things to consider:

- find out and note the main attractions, e.g. **Great Glasshouse, Walled Garden, Butterfly House, etc.**
- examine historical, geographical and artistic point of interest.
- take photographs and make sketches in order to use the images later on in the University based studies
- record factual details accurately – dates, designs, names, measurements
- make use of the wardens and workers – they are here to answer your questions/ explain the exhibits/ features to you

After the visit, among the things you will need to do:

- continue your research into National Botanic Garden of Wales and ESDGC
- decide on issues such as how you can cover all subject requirements, resources
- check with subject tutors whether you are on the right lines ask them questions, check points of accuracy, use them as a resource

Introduction to Education for Sustainable Development and Global Citizenship (EDSGC)

What is EDSGC?

Education for Sustainable Development and Global Citizenship (EDSGC) is education that will prepare young people for life in the 21st century (DCELLS, 2008). ESDGC is about:

- the links between society, economy and environment and between our own lives and those of people throughout the world
- the needs and rights of both present and future generations
- the relationship between power, resources and human rights
- the local and global implications of everything we do and the actions that individuals and organisations can take in response to local and global issues

ACCAC (2002) Education for Sustainable Development and Global Citizenship: Why? What? How? Cardiff: ACCAC.

However, ESDGC should not be seen as an additional subject. It is more than a body of knowledge as it is about values and attitudes, understanding and skills. It is an ethos that can be adopted, a value system and a way of life. ESDGC links the environment and the people who live in, and from, it. It looks at the world and the ways that all living things relate to each other. It recognises that the world is unjust and unequal, but that it can be shaped and changed by the attitudes, values and behaviour of the people who populate it. ESDGC encourages and supports the development of thinking skills, and helps involve and engage young people in their own learning.

The Welsh Context

Wales is a unique country, with its own culture, language and government – a government that has a duty to promote sustainable development. This duty was defined under the Government of Wales Act 1998.

To be sustainable, Wales should promote an economy that makes minimal demands on the environment; take action on social justice to tackle poverty, and ensure

diversity and biodiversity to enhance its communities. It should value its people and support them to live healthy and interdependent lives. However, these things cannot be achieved in isolation and in order for Wales to be a sustainable country it must contribute to a global level. Wales plays an important role in NRG4SD (National Regional Governments for Sustainable Development) and has established links through Wales for Africa and the Gold Star Communities to strive to achieve the Millennium Development Goals. The Sustainable Development Action Plan 2004-7 identified ESDGC as one of the Welsh Assembly Government's top ten priorities. In the same way that sustainable development underlies all Welsh Assembly Government's policies, ESDGC was to become an overarching theme for education in Wales.

In September 2004 Estyn introduced a Common Inspection Framework that made it a requirement for all school inspection reports to comment on ESDGC (a unique feature of the inspection process in Wales). Guidance was provided for inspectors in *Inspection Matters 2* (Estyn, 2005) and this was updated in 2006 following a baseline survey that showed a great disparity of delivery throughout Wales. Where schools were not engaging the "main stumbling block seemed to be the lack of clear view of what ESDGC is about" (Susan Halliwell, Estyn 2008).

In September 2006, '*ESDGC A Strategy for Action*' was published by the Welsh Assembly Government providing actions necessary for all educational sectors. The highlighted the need for a 'Champion' to drive the agenda and for a 'Common Understanding' to provide a clear picture of ESDGC in Wales. As a result the *EDSGC: A Common Understanding for Schools*¹ was published in July 2008.

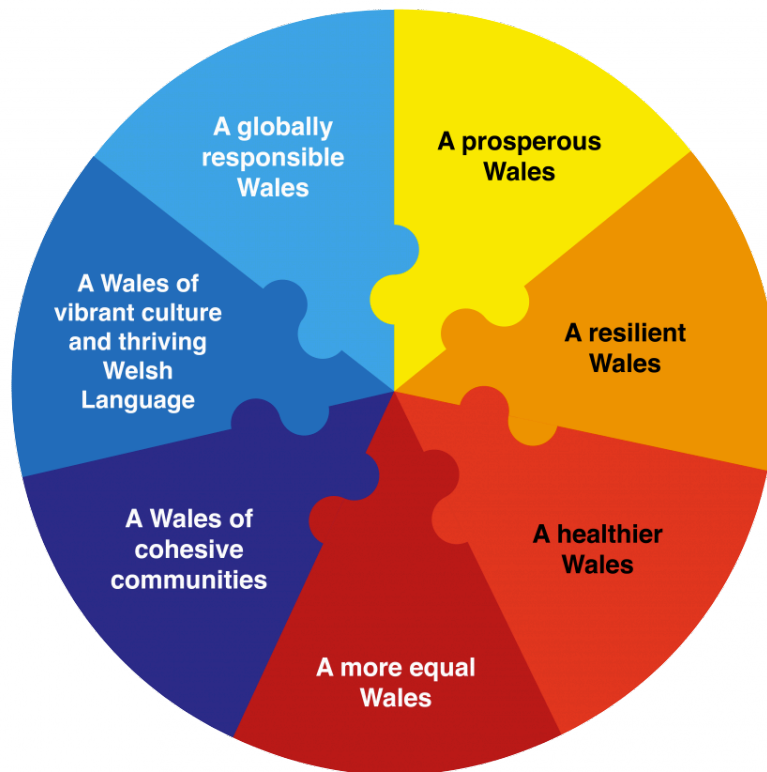
In **June 2014 Estyn** published a thematic report entitled '***ESDGC: Progress in education for sustainable development and global citizenship***'. It reports on the progress that primary, secondary and special schools have made in ESDGC since 2006. Among the main findings they noted that there is now 'no significant difference between pupils' understanding of sustainable development and their understanding of global citizenship.' (Estyn, 2014: 3)

In September 2015, the United Nations launched the **2015 Global Goals** for Sustainable Development. The Global Goals were a series of ambitious targets to end

¹ DCELLS (2008) ESDGC: A Common Understanding for Schools. Cardiff: WAG.

extreme poverty, inequality and tackle climate change for everyone by 2030 (<http://www.globalgoals.org/>).

The **Well-being for Future Generations (Wales) Act 2015** aims to help to achieve these Global Goals. The Well-being of Future Generations Act is about improving the social, economic, environmental and cultural well-being of Wales. The Act puts in place a sustainable development principle which tells organizations how to go about meeting their duty under the Act. It will make the public bodies listed in the Act think more about the long-term, work better with people and communities and each other, look to prevent problems and take a more joined-up approach. This will help us to create a Wales that we all want to live in, now and in the future. To make sure we are all working towards the same vision, the Act puts in place seven well-being goals.



Source:

<http://thewaleswewant.co.uk/about/well-being-future-generations-wales-act-2015>

Essential Background Directed Reading/Tasks

Lead lecture:

What is ESDGC?

Visit the Welsh Assembly Government (WAG) website Learning Wales

<http://learning.gov.wales/?skip=1&lang=en> or moodle and download the following documents:

- DCELLS (2008) *Education for Sustainable Development and Global Citizenship: A Common Understanding for Schools*, Cardiff: WAG.
- DCELLS (2008) *Education for Sustainable Development and Global Citizenship: Information for teacher trainees and new teachers in Wales*, Cardiff: WAG.
- DCELLS (2008) *The Personal and Social Education Framework for 7 to 19 year olds in Wales*, Cardiff: WAG.

Consider these questions:

- Why is ESDGC not a separate subject?
- Why is ESDGC not a series of discrete concepts or topics?
- Why is ESDGC not confined to the classroom?
- Why is ESDGC not the responsibility of just one teacher in the school?
- Why is ESDGC not about transmitting a set of answers to learners?

The Institute for Sustainable Practice, Innovation and Resource Effectiveness (INSPIRE)

Visit the following website to find out how the University of Wales Trinity Saint David is “aiming to deliver for a sustainable Wales” locally, regionally, nationally and internationally.”

<http://www.uwtsd.ac.uk/inspire/>

From CONCEPTS to THEMES - ESDGC

The document entitled *Education for Sustainable Development and Global Citizenship Why? What? How?* (ACCAC, 2002) provided nine ‘key concepts’ that would underpin ESDGC. These are: interdependence, citizenship and stewardship, needs and rights, diversity, sustainable change, quality of life, uncertainty and precaution, values and perceptions and conflict resolution. However, it was felt that the nature of these key concepts did not really help teachers or learners to understand what ESDGC was about (Estyn, 2006). Greater clarity and concrete guidance as to what ESDGC should look like in practice, what areas it should cover and how schools should begin to address the

often complex issues that are involved were needed.

The themes that have been suggested are widely used by many teachers, and are based on themes identified by UNESCO as part of the Decade of Education for Sustainable Development. They must be linked together – they are not discrete topics – and excellence in ESDGC will allow learners to study a range of issues, through the themes and, as confidence and experience grow, to further relate the themes to the key concepts. The themes are:

- consumption and waste
- choices and decisions
- health
- climate change
- identity and culture
- wealth and poverty
- the natural environment

Task: Try to define the 7 themes in your own words. Use the information on pages 26-33 in the *ESDGC: A Common Understanding for Schools* (DCELLS, 2008) to help you. You need to understand these themes to complete the assessment task for this module.

How do I integrate ESDGC in Learning and Teaching?

Making the most of learning (DCELLS, 2008) highlights ESDGC as a cross cutting theme in the revised curriculum for Wales. You will find opportunities for ESDGC at all levels of education, in all topics, in all subjects, in PSE and the Curriculum Cymreig, in whole school activities and in the way the school works as an institution. *ESDGC: A Common Understanding* (DCELLS, 2008) contains some examples of ways to develop skills, knowledge and understanding and values for each key stage, i.e. Foundation Phase and Key Stage 2. When planning to learn and teach ESDGC you should consider the following questions:

- Does the learning offer past, present and future perspectives?
- Does the learning address any of the major themes within ESDGC, i.e. wealth and poverty, health, climate change, the natural environment, consumption and waste?
- Does it make interconnections between these themes and between people, places and events both locally and globally?
- Is the learning relevant to learners' lives?
- Does it encourage critical examination of issues?
- Does the learning address controversial issues and examine conflict resolution?
- Does the learning explore values and cultural perspectives?
- Does it empower learners to take appropriate action?

Making ESDGC relevant to your pupils' lives

Making ESDGC relevant to the lives of your pupils makes it more interesting and motivating and it will help them to more easily perceive and understand the world as a complex and interconnected place. Here are some questions and ideas to consider:

- What links do people already have with other places and countries? For example, do pupils know where their food, clothes, computers, mobile phones and household goods have come from, how they are made and the impact on people and the environment?
- Ask pupils to think about what they have done today to make the world more sustainable. For example, you may get answers such as walking to school, turning computers off, buying local produce, being kind to others.

Task: Think of some other ways in which ESDGC can be made relevant to your pupils. List your ideas below.

Area of Learning/Subject	ESDGC Theme (s)	Activity/ Activities
History	Choices and decisions	Study slavery and why it happened – role play

Visit educational websites such as www.hwb.wales.gov.uk for ideas to help you plan suitable activities for teaching and learning ESDGC.

Read the **Case Studies** on pp.15-16 in the *ESDGC: Common Understanding for Schools* (DCELLS, 2008). Consider the ways the **themes** are **interlinked**, e.g. Case Study 1: natural environment, health and waste and consumption.

Values and Attitudes in ESDGC

To ensure that ESDGC is NOT about transmitting a set of answers to learners it is important that pupils have access to a range of materials from different perspectives. As teachers we need to be aware that our own values are shaped by our own experiences and to consider how these will impact on our teaching. We should be facilitators of learning and not be expecting pupils to accept our own values. However we should be aware of our potential as positive role models so that there is no contradiction between what we say and what we do. Consider the following questions:

- How do you think your own values affect your teaching?
- Do you think there are certain fundamental values?
- How can you avoid imposing your values on pupils?
- What opportunities can you give your pupils to consider and develop their own values?

Literacy, Numeracy, Thinking Skills & Digital Competency in ESDGC

The New *Literacy and Numeracy Framework* (WG, 2013)

<http://learning.wales.gov.uk/resources/nlnf/?lang=en> and the Skills Framework (DCELLS, 2008) emphasizes the importance of developing learning rather than merely transferring facts. It promotes teaching approaches such as collaborative learning, active and interactive learning, including questioning, planning and problem-solving, creativity and reflection. It also helps to develop the key skills of thinking, digital competency together with literacy and numeracy skills.

Look at pp. 21-24 of the *Education for Sustainable Development and Global Citizenship: A Common Understanding for Schools* (DCELLS, 2008) for examples of how to integrate skills such as thinking critically, thinking laterally, linking ideas and concept and making informed decisions to ESDGC themes. Complete the following table:

Skills	Literacy	Numeracy	Thinking	Digital Competency
Possible activities				

ESDGC, Community and Partnership

ESDGC can motivate children because it provides interesting real life, topical

contexts which learners can relate to, and an exciting opportunity to developing skills. Many of the existing school schemes such as EcoSchools, Healthy Schools, Fairtrade schools and the various types of international school partnerships contribute to ESDGC.

Read the **Case Studies** on pp.15-16 in the *ESDGC: Common Understanding for Schools* (DCELLS, 2008). Consider how working with **outside agencies** on **programmes** or **projects** promote ESDGC.

Out of Classroom Learning

Not all learning takes place in the classroom. There are many opportunities to enhance ESDGC through learning outside of the classroom and this can provide a vital link between the theoretical aspects of ESDGC and the reality of the issues that affect our future lifestyles and the world around us.

QTS standard S3.5 requires trainees to demonstrate, as relevant to the age range they are trained to teach, that they are able to plan opportunities for pupils to learn in out-of-school contexts, such as school visits, museums, theatres, field-work and employment based settings, with the help of other staff where appropriate.

ESDGC in out of classroom learning can take many forms, such as learning about interdependence and diversity in the natural environment, carrying out surveys on views of topical issues such as fair trade, visiting museums to learn about the impact of past happenings on the present, and even visiting schools in other countries.

Download the following document from the WAG website, www.wales.gov.uk/dcells **Out of Classroom Learning** (DCELLS, 2007) or from Moodle and reflect on the opportunities to enhance ESDGC through studying the natural environment.

How well is ESDGC being taught in primary schools today?

Visit Estyn's website: www.estyn.gov.uk and download a copy of the latest thematic report on ESDGC entitled *ESDGC: Progress in education for sustainable development and global citizenship* (June 2014). Read examples of best practice case studies.

How can the Well-being of Future Generations (Wales) Act 2015 help the school to deliver a curriculum that will help children and young learners to become: **'ethical, informed citizens of Wales and the world'** (Donaldson, 2015)?

Visit the following website to learn more:
<http://thewaleswewant.co.uk/about/well-being-future-generations-wales-act-2015>

5. Module summary

The order of these sessions may change according to circumstances and there will be overlap in the themes covered.

Session	Summary of Sessions	QTS	Tutor
Intro.	Module introduction, outline and assessment. An overview of ESDGC: background, rationale, curriculum requirements; subsequent definitions and developments including the Well-being of Future Generations (Wales) Act 2015.	S1.1 S2.1	SH
ESDGC Humanities	Knowledge and Understanding of the World (KUW) Considering the contribution of the wider curriculum in developing an understanding of ESDGC by focusing on 'play' based experiences and outdoor learning (Places and People' and 'Time and People').	S2.2 S2.5 S3.3.15	SH
Sci 1	Science 1: Scientists and children are curious beings. An introduction to scientific enquiry in the Primary School. Science "Big Ideas", the Science Enquiry model and its relationship to the skills Framework and its application. Science enquiry begins with a question – fostering the skills of observation and asking questions. Where to access the best online resources and support for primary school science and STEM learning.	S1.1 S2.2 S2.3 S2.5	CL
Sci 2	Science 2: It's not fair, or is it? Developing an engagement with science range and skills. Encouraging learners' questions and thinking about how to go about answering some of these using the range of science enquiry options. A focus on the fair test enquiry.	S1.1 S2.2 S2.3 S2.5	CL
Sci 3	Science 3: Developing science skills in a practical context drawing on examples from the range – Foundation Phase and Key Stage 2.	S1.1 S2.2 S2.3 S2.5	CL
Sci 4	Science 4: Developing science skills in a practical context drawing on examples from the range – Foundation Phase and Key Stage 2.	S1.1 S2.2 S2.3 S2.5	CL
Sci 5	Science 5: Developing science skills in a practical context drawing on examples from the range – Foundation Phase and Key Stage 2.	S1.1 S2.2 S2.3 S2.5	CL
Sci 6	Science 6: Developing science skills in a practical context drawing on examples from the range – Foundation Phase and Key Stage 2.	S1.1 S2.2 S2.3 S2.5	CL

Geog / planning	Geography – Living in My World. Engaging with ESDGC themes relating to geography focused learning experiences in this aspect of the curriculum, e.g. consumption and waste, natural environment, climate change. Planning for the teaching of ESDGC in cross-curricular themes and wider curriculum contexts.	S2.1 (b) S2.2 S2.5 S3.1.1 S3.1.5 S3.2.3	SH
History	History - Citizenship. Engaging with ESDGC themes relating to history, e.g. identity and culture, choices and decisions, wealth and poverty. Planning for teaching ESDGC using cross-curricular themes and wider curriculum contexts, e.g. Tudors.	S2.1 S2.2 S2.5 S3.1.5	TC
History/ planning	History - Global Citizenship Engaging with ESDGC themes relating to history focused learning experiences in this aspect of the curriculum, e.g. consumption and waste, identity and culture. Planning for the teaching of ESDGC in cross-curricular themes and wider curriculum contexts.	S2.1 S2.2 S2.5 S3.1.1 S3.1.5	TC
RE	RE – Identity and Culture. Exploration of the spiritual, moral, social and cultural dimensions of ESDGC. Opportunities to engage with ESDGC themes relating to understanding religious identity and culture in different parts of the world.	S2.1 (b) S2.2 S2.5 S3.1.1 S3.1.5 S3.2.3	SH/NR
Projects	ESDGC, Partnerships and Community – Exploring the contribution of working with outside agencies, initiatives and projects that promote ESDGC (e.g. Eco Schools, GLP-W) in developing an understanding of ESDGC.	S2.2 S3.1 S3.2 S3.3.15	SH
Visit	Educational visit – Opportunities to explore possible themes, e.g. the use of the locality including school gardens, case study of the National Botanic Garden of Wales (Llanarthne).	S2.2 S3.1 S3.3.15 S3.5	SH, CL, etc.

The order of these sessions may change according to circumstances and there will be overlap in the themes covered.

6. Assessment tasks and guidance

Refer to 2018/19 submission and return dates on Moodle.

MODULE CODE	MODULE TITLE	MODE OF ASSESSMENT
ECAD4006	ESDGC, Science and the Wider Curriculum	Assignment (equivalent to 3000 words) 100% Resource and Explanation of Resource SUBMIT: 23/11/2018

Please see further information on the Assessment Specification Template form (Moodle)

Essential

DCELLS (2008) *Education for Sustainable Development and Global Citizenship: A Common Understanding for Schools*. Cardiff: Welsh Assembly Government (WAG). (Copy available on moodle*)

DCELLS (2008) *Education for Sustainable Development and Global Citizenship: Information for teacher trainees and new teachers in Wales*. Cardiff: Welsh Assembly Government (WAG). (Copy available on moodle*)

DCELLS (2008) *National Exemplar Framework for Religious Education for 3- 19 years olds in Wales*. Cardiff: Welsh Assembly Government (WAG).

Donaldson, G. (2015) *Successful Futures – Independent Review of Curriculum and Assessment Arrangements in Wales*. Cardiff: Welsh Government. Available at: <http://gov.wales/docs/dcells/publications/150225-successful-futures-en.pdf>

Dunne, M. and Peacock, A. (2012) *Primary Science a Guide to Teaching Practice*. London: Sage.

Estyn (2014) *ESDGC: Progress in education for sustainable development and global citizenship*. Cardiff: Estyn. (Copy available on moodle*)

Grigg, R. & Hughes, S. (2013) *Teaching Primary Humanities*. Harlow: Pearson Education

Harlen, W. and Qualter, A. (2014) *The Teaching of Science in Primary Schools*. Oxon: David Fulton.

Kerry, T. (ed) (2011) *Cross-Curricular Teaching in the Primary School*. London: Routledge.

Loxley, P. et al. (2010) *Teaching Primary Science, Promoting Enjoyment and Developing Understanding*. London: Pearson Education.

Owens, P. & Martin, F. (2008) *Caring for our World: A Practical Guide to ESD for ages 4-8*. Sheffield: Geographical Association.

Peacock, G. et al. (2014) *Primary Science Knowledge and Understanding*. London: Learning Matters. (ebook)*

Scoffham, S. (2010) *Primary Geography Handbook*. Sheffield: Geographical Association.

Sharp, J. et al. (2014) *Primary Science Teaching Theory and Practice*. London: Learning Matters. (ebook)*

Welsh Government (2013) *Literacy and Numeracy Framework*. Cardiff: Welsh Assembly Government.

Recommended

Constable, K. (2017) *The Outdoor Classroom Ages 3-7: Using ideas from Forest Schools to Enrich Learning*. London: Routledge.

Davis, J. (2010) *Young Children and the Environment: Early Education for Sustainability*. Cambridge: Cambridge University Press.

Hoodless, P. *et al.* (2009) *Teaching Humanities in Primary Schools (Achieving QTS)* Exeter: Learning Matters.

Rowley, C. & Cooper, H. (2009) *Cross-Curricular Approaches to Teaching and Learning*. London: Sage Publications.

Journals

Primary History - HA

Primary Geography - GA

Primary Science - ASE

Websites

ESDGC Wales-Cyfanfyd-think-global – <https://think-global.org.uk/member/cyfanfyd/>

Geographical Association – www.geography.org.uk

Global Goals - <http://www.globalgoals.org/>

Global Learning Programme - Wales <https://globaldimension.org.uk/glpwales>

Hwb – the all Wales Learning Platform – <http://hwb.wales.gov.uk>

Learning Through Landscapes – www.ltl.org.uk

Schoolscience - www.schoolscience.co.uk

Scicentre - www.le.ac.uk/se/centres/sci/SCIcentre.html

The Historical Association – www.history.org.uk

The Association for Science Education - <https://www.ase.org.uk/home/>

