Crossfields Institute

Qualification Specification

Level 3 Diploma in Biodynamic Farming and Gardening

Crossfields Institute © Ownership of Copyright 2016

All rights reserved worldwide.

Reproduction by centres approved to deliver this qualification is permissible for internal use under the following conditions:

This Qualification Specification has been provided in Microsoft Word format to enable approved Centres to use its content more flexibly within their own materials. You may copy and paste any material from this document; however, Crossfields Institute does not accept liability for any incomplete or inaccurate copying and subsequent use of this information. The use of PDF versions of our materials will ensure that correct and up-to-date information is provided to learners.

Qualification reference number: 601/8675/6

Crossfields Institute Level 3 Diploma in Biodynamic Farming and Gardening

Published in Great Britain
Crossfields Institute
Stroud House
Russell Street
Stroud
Gloucestershire
GL5 3AN
Tel: 01453 808118

Registered Company No: 6503063

Registered Charity No: 1124859

Publication date August 2016

Version 3.0 April 2017

Crossfields Institute
Qualifications | Education | Development

Introduction

This Crossfields Institute Level 3 Diploma in Biodynamic Farming and Gardening is an Ofqual regulated qualification.

About Crossfields Institute

Crossfields Institute is an awarding organisation and educational charity specialising in holistic and integrative education and research. The Institute develops specialist qualifications which aim to support the development of autonomous learners with the intellectual rigour, practical skills, social responsibility and ability to think creatively and act decisively. The Institute is also a higher education institute (HEI) and works in partnerships with universities in the UK and overseas.

Guide to the Specification

We aim to support centres in providing a high quality educational experience. We also believe that for learners to get the most out of this qualification they should be encouraged to be autonomous and responsible in their approach to their studies. A clear, accessible qualification specification is key to this. This specification gives details about the qualification, explains how it is assessed and outlines important policies which support its delivery. It is an essential document for learners, centres and assessors, and has been written with all these audiences in mind.

The specification should be used as a reference source both before and during delivery of the qualification, and also signposts where further advice and support may be found.

Key Facts

Qualification Title	Crossfields Institute Level 3 Diploma in Biodynamic Farming and Gardening
Qualification Number	601/8675/6
Rules of Combination	All learners are required to complete the 19 mandatory units totalling 570 TQT. In addition learners must select units from the optional list. The optional units may be taken in any combination, but must total at least 430 TQT.
Total Qualification Time	1000
Guided Learning Hours	Min: 380 Max: 380
Minimum age of learners	Learners must be at least 18 years of age, however due to the level of commitment required from this work-based learning qualification, a minimum age of 21 may be considered preferable by centres.
Assessment Methods	Portfolio of evidence
Grading system	Pass / Fail
How long will it take to complete?	This is a work-based learning qualification. Learners are required to be employed in a gardening or farming setting, working a minimum of 3 days a week throughout the duration of the qualification. Suggested timeframe for completion of this qualification is three years.
Developed by	The qualification has been developed by Crossfields Institute with subject specific expertise provided by the Biodynamic Agricultural College (BDAC).

Introduction **3**

About Crossfields Institute 3

Guide to the Specification 3

Key Facts **4**

Section 1: About this Qualification **9**

1.1 Qualification objective and rationale 9

1.2 Overview of the qualification 9

1.2.1 Overview of knowledge, understanding and skills 9

1.2.2 Rules of Combination 9

1.2.3 Requirements for real work environments 10

1.2.4 Progression opportunities 10

1.2.5 Delivery requirements 10

1.2.6 Assessment overview 10

1.3 Expectations of learners 11

1.4 Requirements for centres 11

1.5 Role of the centre and Crossfields Institute 12

Section 2: Units **13**

2.1 Unit list 13

2.2 Guide to the units 14

BDFG-L3-unit1 The Biodynamic Farm Organism **17**

BDFG-L3-unit2 People and Agriculture **19**

BDFG-L3-unit3 Weather and Biodynamics **21**

BDFG-L3-unit4 Soil Science and Phenomenology **23**

BDFG-L3-unit5 Biodynamic Farm Fertility **25**

BDFG-L3-unit6 Soil Cultivation **27**

BDFG-L3-unit7 Biodynamic Compost **29**

BDFG-L3-unit8 Land-based Machinery **31**

BDFG-L3-unit9 Plant Science and Phenomenology **34**

BDFG-L3-unit10 Biodynamic Seeds **37**

BDFG-L3-unit11 Animal Science and Phenomenology **39**

BDFG-L3-unit12 Biodynamic Preparations **42**

BDFG-L3-unit13 Biodynamic Habitat Management **44**

BDFG-L3-unit14 Agricultural Astronomy **46**

BDFG-L3-unit15 Introduction to Anthroposophy **48**

BDFG-L3-unit16 Nature and Human Life **50**

BDFG-L3-unit17 Nutrition and Food **52**

BDFG-L3-unit18 Enterprise Planning **54**

BDFG-L3-unit19 Reflective Practice, Learning and Development **56**

BDFG-L3-unit20 Biodynamic Vegetable Growing **59**

BDFG-L3-unit21 Biodynamic Fruit Growing **62**

BDFG-L3-unit22 Biodynamic Flower Growing **65**

BDFG-L3-unit23 Biodynamic Herb Growing **68**

BDFG-L3-unit24 Biodynamic Seed Growing **71**

BDFG-L3-unit25 Biodynamic Protected Growing **74**

BDFG-L3-unit26 Biodynamic Grassland and Fodder **77**

BDFG-L3-unit27 Biodynamic Arable Growing **80**

BDFG-L3-unit28 Biodynamic Cattle Husbandry **83**

BDFG-L3-unit29 Biodynamic Sheep Husbandry **86**

BDFG-L3-unit30 Biodynamic Goat Husbandry **89**

BDFG-L3-unit31 Biodynamic Pig Husbandry **92**

BDFG-L3-unit32 Biodynamic Poultry Husbandry 95

BDFG-L3-unit33 Biodynamic Dairy Husbandry 98

BDFG-L3-unit34 Biodynamic Bee Husbandry 102

BDFG-L3-unit35 Working with Draught Animals 104

BDFG-L3-unit36 Land based Social Pedagogy 106

BDFG-L3-unit37 Biodynamic On-Farm Processing 108

BDFG-L3-unit38 Sustainable Resource Management 110

BDFG-L3-unit39 Fencing 112

Section 3: Delivery Requirements 114

Section 4: Assessment & Quality Assurance 115

4.1 Our Approach 115

4.2 Assessment Requirements 115

4.3 Quality Assurance Process 115

4.4 Assessment Planning Guidance 116

4.5 Training and Support 116

Section 5: Policies and Procedures 117

Relevant policies include: 117

Appendix 1: Verb Explanation and Evidence Requirements 118

Appendix 2 Reading List 120

Section 1:
About this Qualification

1.1 Qualification objective and rationale

The objectives of the Crossfields Institute Level 3 Diploma in Biodynamic Farming and Gardening are to:

- prepare learners to progress to further studies in farming, gardening or biodynamic related activities
- Prepare learners to find employment
- Support learners in their existing role in the workplace

This qualification aims to provide learners with a practical, work-based approach to learning about biodynamic farming and gardening. Upon completion learners will be able to work in organic, biodynamic and other holistic farming and gardening settings. This qualification has been designed for those with an interest in a holistic approach to food growing and production. This includes those with an interest in sustainable development for agriculture, environment and community. This qualification may also appeal to individuals wishing to set up their own enterprise or those with an interest in enriching and consolidating a holistic lifestyle, or in working on the land or within an environmental sustainability project.

1.2 Overview of the qualification

1.2.1 Overview of knowledge, understanding and skills

The qualification places a holistic way of understanding the natural world as its premise and applies that understanding through a work-based approach to learning. Biodynamic approaches to farming and gardening promote vitality, resilience and ethical stewardship of land, plants, animals and human beings. This qualification therefore aims to teach learners about sustainable and alternative solutions to current and future environmental challenges through developing practical knowledge and understanding of biodynamic farming and gardening within the wider context of holistic approaches.

1.2.2 Rules of Combination

All units are at level 3. Learners must complete 19 mandatory units totalling 570 Total Qualification Time (TQT). In addition, learners must select additional units from the optional list. Learners may choose any units from the optional list, but the TQT must be at least 430.

The TQT of this qualification is 1000 hours, some of which is guided learning hours (GLH) i.e. face to face delivery time. The amount of GLH allocated to each unit is specified in the unit descriptors. Nevertheless, learners should bear in mind that these hours are given for guidance only and the amount of time required by individual learners will vary.

1.2.3 Requirements for real work environments

This is a work-based learning qualification and therefore requires significant commitment from learners in the development of practical skills. In addition to completing the units, learners are required to work in a land based setting whilst undertaking this qualification. Ideally this would be on a full time basis, or, as a minimum, for three days per week. This practical experience is essential in underpinning the development of learners' knowledge, understanding and skills. The real work requirement is in addition to the Total Qualification Time for this qualification, although some practical land based work is also included in the TQT.

1.2.4 Progression opportunities

This qualification prepares learners to:

- Work in a biodynamic farming or gardening setting: as a head gardener; arable, herds or fruit manager; in farm management roles.
- Work in post-harvest roles such as organic or biodynamic food processing; organic or biodynamic certification; food advocacy.
- Progress into higher education courses such as a Foundation Degree in Agriculture and Rural Studies; Degrees in Agricultural Technology, Agriculture and Food or Rural Business Management.

1.2.5 Delivery requirements

This qualification has a practical and holistic emphasis. Centres should therefore ensure that delivery methods take this into account. A full explanation of the delivery requirements for this qualification is included in section three. This explains the delivery requirements for all units, but where a unit has specific delivery instructions, these are included in the unit.

1.2.6 Assessment overview

Learners are required to submit a portfolio of evidence for this qualification. This portfolio is internally assessed against each unit's assessment criterion on a pass or refer basis by tutor assessors. Full information about the assessment process is included in section four.

Plagiarism

Plagiarism means claiming work to be your own which has been copied from someone or somewhere else. All the work you submit must be your own and not copied from anyone else unless you clearly reference the source of your information. Your tutor will explain how to provide a reference list that shows where you found your information. If your Centre discovers evidence that your work is copied from elsewhere, it will not be accepted and you may be subject to your Centre's or our disciplinary procedure. If this happens you will have to submit an additional piece of work for assessment. We will be notified of any cases of plagiarism.

Buying and selling assignments

Offering to buy or sell assignments is not allowed. This includes using sites such as eBay. If this happens we reserve the right not to accept future entries from you

Full information about the assessment process is included in section four.

1.2.7 Levels of Attainment

This qualification is published on the OFQUAL register under the Qualification Credit Framework as a level 3 qualification.

Level Descriptor from the Regulated Qualifications Framework 2015

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/461637/qualification-and-component-levels.pdf

Knowledge Descriptor (the holder …)	Skills Descriptor (the holder can…)
Has practical, theoretical or technological knowledge and understanding of a subject or field of work to find ways forward in broadly defined, complex contexts. Can analyse, interpret and evaluate relevant information, concepts and ideas. Is aware of the nature and scope of the area of study or work. Understands different perspectives, approaches or schools of thought and the reasoning behind them.	Determine, adapt and use appropriate methods, cognitive and practical skills to address broadly defined, complex problems. Use relevant research or development to inform actions. Evaluate actions, methods and results.

Unit learning outcomes and assessment criteria are designed to fit this level. Tutors assess work for the qualification against this level descriptor throughout the qualification.

1.3 Expectations of learners

Entry requirements:

- Be at least 18 years of age
- Demonstration of an active interest in sustainability, agriculture, the environment and community
- Be committed to the practical, work-based requirements of this qualification
- Applicants for whom English is not the first language must be able to demonstrate that they are able to meet the requirements of this qualification. Applicants may be asked to have a verbal interview and complete a written assignment as part of a process to ascertain whether the applicant's English level will enable them to access the demands of this qualification.

Centres must follow their access and recruitment policy, in accordance with Crossfields Institute's requirements, to ensure equality and diversity in recruitment for this qualification.

1.4 Requirements for centres

To offer this qualification, centres must be approved by Crossfields Institute. Existing Crossfields Institute centres can apply for approval to deliver this qualification alongside their existing qualifications. For more information about these processes, please contact us via email qualityassurance@crossfieldsinstitute.com or call the Quality Assurance Team on 01453 760295.

In order to be approved to offer this qualification, centres must have:

- Access to work experience opportunities for learners on organic or biodynamic farms and gardens.

- Adequate resources to meet the delivery and assessment requirements for this qualification. Please contact Crossfields Institute for further information regarding this.

- Tutors and assessors who have current and relevant understanding of the subject matter and can evidence a substantial biodynamic farming and gardening background. Assessors will need to be both occupationally knowledgeable and qualified to make assessment decisions.

- Internal Quality Assurers who are both occupationally knowledgeable and qualified to make quality assurance decisions.

1.5 Role of the centre and Crossfields Institute

Each centre is required to work in partnership with Crossfields Institute to ensure that all learners have the best possible experience whilst taking this qualification and are treated fairly. Our commitment to this is supported by our Centre Handbook, which all centres should become familiar with. The handbook also includes a range of mandatory policies which are explained in section five.

If you have any queries or concerns about this qualification, or if you would like to suggest improvements to this specification or the qualification itself, please contact us by email on qualityassurance@crossfieldsinstitute.com or call the Quality Assurance Team on 01453 760295.

Section 2: Units

2.1 Unit list

Mandatory Units

Unit name	Ofqual unit reference number	TQT
The Biodynamic Farm Organism	Y/508/1462	20
People and Agriculture	D/508/1463	20
Weather and Biodynamics	H/508/1464	20
Soil Science and Phenomenology	K/508/1465	40
Biodynamic Farm Fertility	M/508/1466	20
Soil Cultivation	T/508/1467	40
Biodynamic Compost	A/508/1468	30
Land-based Machinery	F/508/1469	40
Plant Science and Phenomenology	T/508/1470	40
Biodynamic Seeds	A/508/1471	20
Animal Science and Phenomenology	F/508/1472	40
Biodynamic Preparations	J/508/1473	30
Biodynamic Habitat Management	L/508/1474	20
Agricultural Astronomy	R/508/1475	30
Introduction to Anthroposophy	D/508/1477	20
Nature and Human Life	H/508/1478	20
Nutrition and Food	K/508/1479	20
Enterprise Planning	D/508/1480	40
Reflective Practice, Learning and Development	H/508/1481	60

Optional Units

Biodynamic Vegetable Growing	K/508/1482	200
Biodynamic Fruit Growing	M/508/1483	200
Biodynamic Flower Growing	T/508/1484	200
Biodynamic Herb Growing	A/508/1485	200
Biodynamic Seed Growing	F/508/1486	200
Biodynamic Protected Growing	J/508/1487	200
Biodynamic Grassland and Fodder	L/508/1488	200

Biodynamic Arable Growing	R/508/1489	200
Biodynamic Cattle Husbandry	J/508/1490	200
Biodynamic Sheep Husbandry	L/508/1491	200
Biodynamic Goat Husbandry	R/508/1492	200
Biodynamic Pig Husbandry	Y/508/1493	200
Biodynamic Poultry Husbandry	D/508/1494	200
Biodynamic Dairy Husbandry	H/508/1495	200
Biodynamic Bee Husbandry	K/508/1496	30
Working with Draught Animals	M/508/1497	30
Land based Social Pedagogy	T/508/1498	30
Biodynamic On-Farm Processing	A/508/1499	30
Sustainable Resource Management	H/508/1500	30
Fencing	K/508/1501	30

2.2 Guide to the units

The qualification is split into units, which specify what knowledge and skills learners must demonstrate in their assessment tasks. Each unit covers one area of the qualification and includes:

Unit Code	A unique code assigned by the regulator
Unit Level	Gives the level of demand placed upon learners in line with level descriptors published by the regulator
Unit Aim	Explains the overall aim of the unit, giving some indication of what is covered and how the unit fits into the qualification as a whole
Content Overview	Additional information about what should be delivered within the unit. (Only provided where appropriate.)
Total Qualification Time (TQT)	Total hours required to complete the unit – including independent study and assessment
Guided Learning Hours (GLH)	Total hours of face to face time, which includes classroom, lectures, seminars, supervised work placement, mentoring, and tutor facilitated online learning
Learning Outcomes	Tell learners what they will know, understand and be able to do upon completion of the unit
Assessment Criteria	Indicate how learners will have met the learning outcome

Where there are *italics,* this is to provide further detail of what is covered in the assessment criteria.

*Italicised sections beginning with **"Must include"** means that all italicised guidance should be met for the assessment criteria to be achieved. Italicised sections beginning with **"May Include"** is provided for guidance only.*

There may also be specific instructions about requirements for delivery. This is only where guidance is needed in addition to the more general guidance provided in delivery section.

In learning outcomes and assessment criteria it is important to take note of the language used. In particular, the verbs give a clear idea of what is expected of learners. For example, being asked to 'explain' a concept is very different from being asked to 'evaluate' an approach. An explanation of the verbs used and their evidence requirements is provided in **Appendix 1.**

Where reference is made to "own holding" in learning outcomes or assessment criteria, this means that learners should refer to their land based work placement.

BDFG-L3-unit1
The Biodynamic Farm Organism

Unit code	Y/508/1462	**Guided Learning Hours (GLH)**	10
Unit level	3	**Total Qualification Time (TQT)**	20

Unit aim

The principle of the 'farm organism' is central to the biodynamic approach to farming and gardening. This unit introduces this principle and explores its implications for biodynamic understanding and practice. This unit aims to demonstrate how the principles of the farm as an organism require an integrated and balanced approach. By considering the biodynamic farm's parts within a wider context of the whole, learners will have the opportunity to explore the impact of a holistic approach to farming and gardening.

Content overview

Learning outcome 1: The principle of the farm organism

Learners will be introduced to the principle of the farm as an organism by first considering 'what is an organism?'. Drawing on this understanding, learners should be able to articulate what elements should be taken into account when considering the balance of a biodynamic farm organism.

Learners will consider the following as key ways of understanding the principle of the farm organism: the integration of the four domains of soil, plant, animal and human as well as the role of the social element in the biodynamic farm. They will consider the distinction between Steiner's principles of physical, etheric, astral and ego and their interaction in the context of the biodynamic farm (Steiner, R, 2011). The farm's individuality and genius loci, the biodiversity, wildlife as well as the farm ecology are also key elements that will be explored in understanding the principle of the farm organism. Learners will also explore discussions from lectures 2 and 7 in the Agriculture Course (Steiner, R, 2001) regarding the polarity of 'cosmic' and 'earthly' influences in a biodynamic context.

Learning outcome 2: Approaches to supporting the farm as an organism

Learners should create a profile of their own holding or the holding on which they are employed in order to reflect on the principles of the farm organism and how they are applied in practice.

Learners should explore how the principle of the farm organism can inform their understanding and management of their holding and provide tools for taking a broader view of their holding, which takes into account both physical and more subtle aspects. Understanding the farm organism can structure the process by which farms strive to balance their different elements and enterprises, improve overall fertility and use the biodynamic preparations.

Learning outcome 3: Demeter Standards relating to the farm organism

The principle of the farm organism is a structuring principle for the Demeter Standards. Learners should develop their understanding of these basic principles as expressed in the Demeter Standards.

Learning outcomes **The learner will:**	Assessment criteria **The learner can:**
1. Understand the principle of the farm organism in Biodynamic farming	1.1 Compare the elements of an organism to the Biodynamic principle of the farm as an organism *This must include the following: physical and sensory aspects; internal and external processes and relationships; individual identity.*
	1.2 Discuss the benefits of working with the principle of a farm as an organism
2. Understand the organism of own holding	2.1 Describe the organism of own holding
	2.2 Assess potential improvements for own holding using the principle of the farm organism
3. Know how Demeter Production Standards apply the principle of the farm organism	3.1 Identify how Demeter Production Standards apply the principle of the farm organism

Additional Requirements for Delivery

It is important for learners to understand the practical context of the *knowledge* and *understanding* learning outcomes contained within this unit. Learners should therefore be encouraged to relate their learning within this unit to their work-based farm and/or garden experiences.

BDFG-L3-unit2
People and Agriculture

Unit code	D/508/1463	**Guided Learning Hours (GLH)**	10
Unit level	3	**Total Qualification Time (TQT)**	20

Unit aim

The unit aims to provide learners with an introduction to how farming has changed over time in order to provide a context for modern biodynamic agriculture.

This unit explores the relationship between culture and agriculture, how they have developed and influenced one another historically and how they are experienced today. The aim is that this will provide a context for understanding the development of biodynamic agriculture as well as its contemporary role and aims.

Content overview

Learning outcome: 1 Understand key elements of the development of agriculture
Learners should be introduced to changing agricultural practices throughout history, exploring how those have reflected and influenced human culture with specific attention to the development of land ownership. This may include for example: hunter-gatherer, birth of agriculture, domestication of plants and animals, pastoralism, peasant farming, commons and enclosures, mechanisation, the green revolution and contemporary agriculture. This can provide a context for Steiner's Agriculture Course (Steiner, R, 2001) and the development of biodynamic agriculture, with the wider view of the biodynamic movement as a whole.

Learning outcome 2: Challenges of contemporary agriculture
Learners should be encouraged to examine key issues in contemporary approaches to agriculture, with attention to both local and global questions. They should explore the differences in the way conventional, organic and biodynamic agriculture present solutions to these challenges. This consideration may also include: sustainable agriculture, permaculture, hydroponics, agroforestry and others.

Learning outcome 3: Community relationships to land
Learners should be introduced to different forms of land ownership, possibly including land trusts, community supported agriculture, urban agriculture and cooperatives as well as modern farm related enterprise models e.g. box schemes, processing, social farming (education, recreation, and therapeutic). Some discussion of how these inform the principle of the farm organism should be included.

Learning outcomes **The learner will:**	Assessment criteria **The learner can:**
1. Understand key elements of the development of agriculture	1.1 Identify key elements of the development of agriculture over the last 1000 years *May include: land ownership, impact on landscape, the development of machinery, politics*
	1.2 Describe the origins of biodynamic agriculture
2. Understand challenges of contemporary agriculture	2.1 Discuss key challenges facing contemporary agriculture *May include: food supply, demand and distribution; approaches to seed breeding; industrial farming; pollution; energy consumption; bio-fuel*
	2.2 Evaluate different agricultural approaches to possible solutions to these challenges
3. Understand community relationships to land	3.1 Describe models of community access to land *Must include: at least two different models*
	3.2 Discuss potential benefits for community to have a relationship to agriculture

Additional Requirements for Delivery

It is important for learners to understand the practical context of the *knowledge* and *understanding* learning outcomes contained within this unit. Learners should therefore be encouraged to relate their learning within this unit to their work-based farm and/or garden experiences.

BDFG-L3-unit3
Weather and Biodynamics

Unit code	H/508/1464	**Guided Learning Hours (GLH)**	10
Unit level	3	**Total Qualification Time (TQT)**	20

Unit aim

The unit aims to provide learners with the observational techniques for understanding the weather in the landscape.

Weather and climate have a strong influence on agriculture. Through phenomenological and observational techniques, learners can develop a familiarity with the weather patterns in their area. Learners can also develop insights into how this understanding of weather can be integrated with their experience of nature and their practice of agriculture.

The 'Soil', 'Plant' and 'Animal' Phenomenology units provide a context for the observational approach that is used in this unit.

Content overview

Learning outcome 1: Observing and recording weather
Learners should be introduced to phenomenological observation skills specifically applied to weather, for example: the effect on insects, animals, noise and soil; cloud types and characteristics of weather fronts.
Learners should become familiar with the most common weather patterns that affect their own holding through regular weather records. They should also be introduced to methods for relating weather charts to conditions on the ground both in current and developing conditions.

Learning outcome: 2 Relating weather observations to work on the land
Learners should become practiced in connecting their observations concerning the weather to the experience and planning in land work (e.g. the effect of weather on crop yield, health in livestock and crops, and how this may influence future planning). Learners should also become familiar with how weather conditions affect the spraying of biodynamic preparations and other applied biodynamic practices.

Learning outcome: 3 Basic concepts in modern meteorology
Learners should become familiar with the basic concepts in modern meteorology and weather forecasting including: temperature, barometric pressure, precipitation, prevailing winds, cloud types, fronts and cloud sequences associated with fronts.
Learners should also have some practice in reading charts, such as surface pressure charts and satellite charts.
Learners should be introduced to how human beings have experienced weather over the course of history and how this experience has changed over time. This may include:

indigenous, early European, medieval and contemporary (linking the development of the science of weather to the evolution of consciousness).
Learners should be introduced to the historical overview which can provide a context for the contemporary science of meteorology, which should include some aspects of a qualitative approach to weather phenomena. This may include the use of planting calendars, weather prediction and the phases of the moon, or for instance a basic introduction to astro-climatology, as articulated by Klocek (Klocek, D, 1991).

Learning outcomes **The learner will:**	Assessment criteria **The learner can:**
1. Be able to record own observations of weather	1.1 Record own weather observations *Must include a minimum of two months' recordings*
2. Understand how weather observations can inform own understanding of working with the land	2.1 Demonstrate how weather observations have informed own understanding of working with the land
3. Know basic concepts in modern meteorology	3.1 Identify basic concepts in modern meteorology *May include: cloud formations, wind temperature, pressure, rainfall etc.*

Additional Requirements for Delivery

It is important for learners to understand the practical context of the *knowledge* and *understanding* learning outcomes contained within this unit. Learners should therefore be encouraged to relate their learning within this unit to their work-based farm and/or garden experiences.

BDFG-L3-unit4
Soil Science and Phenomenology

Unit code	K/508/1465	**Guided Learning Hours (GLH)**	20
Unit level	3	**Total Qualification Time (TQT)**	40

Unit aim

The unit aims to provide learners with an understanding of soil in its many aspects.

Biodynamic farming and gardening places special emphasis on supporting long-term vitality in the soil. Therefore it is vital that biodynamic practitioners have a thorough understanding of the origins (soil formation), structures (classification), characteristics and activities in the soil. It is also important to understand how soil can be worked with at structural, biological and chemical levels in striving for fertility and balance. In addition, non-physical aspects relating to soil science are also key to this unit.

This unit is closely related to the following units: 'Biodynamic Farm Fertility' and 'Soil Management'.

Content overview

Learning outcome 1: Principles of healthy soil
Learners should become familiar with the way underlying geology may affect topsoil and how soil and specifically topsoil is formed. This should include consideration of rocks/subsoil/topsoil, different types of soils, weathering, characteristics of soils (clay, silt, sand) and humus formation. The processes by which soil is formed and the process by which humus is formed should be explored. Learners should also examine the damaging effects of compaction, water logging, erosion and inappropriate fertilisation and by contrast, the conditions that lead to healthy, fertile soils and the role of soil life in these conditions.

Learning outcome 2: Assessing soils
Learners should become familiar with key aspects of assessing soils, focusing on phenomenological principles. They will perform simple field tests and laboratory test interpretations as well as cation exchange capacity (CEC), water holding capacity, organic matter content to assess: texture, colour, structure, sedimentation, vegetation (root penetration), water content, pH, and biology (soil life, organisms). Learners should become familiar with the fundamental principles of soil chemistry, including major and trace elements. Learners should also be able to use landscape, climate and plants as indicators of soil quality.

Learning outcome 3: Biodynamic principles of healthy soil
The role of soil in the farm organism should be introduced by considering the mediating role of the soil; how silica/lime/clay (as dynamics rather than substances) are at work in

different soils, the role of soil in plant nutrition; how cosmic and earthly influences are working in the soil; and the role of the inner and outer planets in influencing the soil. Once these aspects are considered the role of *healthy* soil in the farm organism should be considered in its relationship with the other aspects of the farm.

Learning outcomes **The learner will:**	Assessment criteria **The learner can:**
1. Understand the principles of healthy soil	1.1 Explain how healthy soil is formed
	1.2 Discuss the value of healthy soil
	1.3 Discuss the value of soil tests in maintaining healthy soil
2. Be able to assess soil using phenomenological principles	2.1 Demonstrate how to assess soil using phenomenological principles
3. Understand biodynamic principles of soil	3.1 Describe biodynamic principles of soil
	3.2 Describe the silica, lime, clay processes in relation to soil

Additional Requirements for Delivery

It is important for learners to understand the practical context of the *knowledge* and *understanding* learning outcomes contained within this unit. Learners should therefore be encouraged to relate their learning within this unit to their work-based farm and/or garden experiences.

BDFG-L3-unit5
Biodynamic Farm Fertility

Unit code	M/508/1466	**Guided Learning Hours (GLH)**	10
Unit level	3	**Total Qualification Time (TQT)**	20

Unit aim

This unit aims to provide learners with an understanding of farm fertility: how it is understood within a biodynamic approach, how fertility is supported with biodynamic practices and the overall significance of fertility on the farm organism.

The aim of fertility and balance has broad implications in the biodynamic farm organism. It is one of the aspects of the farm that farmers and growers are always striving to improve. Therefore this unit puts a specific emphasis on the practical aspects of developing fertility within a farm as an organism. This unit is therefore closely related to the 'Farm Organism' unit, as well as supporting the 'Soil Science and Phenomenology', 'Soil Management' and 'Plant Health' units.

Content overview

Learning outcome 1: The biodynamic approach to farm fertility
Learners should be encouraged to consider the meaning of fertility in an agricultural sense, examining the different approaches of conventional, organic and biodynamic farming and gardening.
Specific attention should be paid to ways in which biodynamic farming and gardening works to support, build and maintain farm fertility. This should include: crop rotations, green manures (e.g. legumes), compost, manures, mineral budgets (and their limitations), nutrient cycles, pastureland, biodynamic preparations, and animal numbers in relation to farm organism.

Learning outcome 2: Biodynamic soil fertility planning
Learners should consider different aspects of biodynamic farm fertility and consider how it is in practice on their own holding. By looking specifically at the fertility plans of their own holding and working with their supervisor or tutor, learners will have the opportunity see the practical implications of biodynamic farm fertility planning and will be able to suggest ways in which this planning may be improved.

Learning outcomes **The learner will:**	Assessment criteria **The learner can:**
1. Understand the biodynamic approach to farm fertility	1.1 Consider factors that are included in the biodynamic approach to fertility
	1.2 Compare and contrast conventional, organic and biodynamic approaches to farm fertility
2. Understand biodynamic soil fertility planning	2.1 Explain the fertility cycle of own holding
	2.2 Consider ways in which biodynamic practices currently support this fertility cycle
	2.3 Reflect on ways in which biodynamic practices for supporting fertility cycle may be improved on own holding

Additional Requirements for Delivery

It is important for learners to understand the practical context of the *knowledge* and *understanding* learning outcomes contained within this unit. Learners should therefore be encouraged to relate their learning within this unit to their work-based farm and/or garden experiences.

BDFG-L3-unit6
Soil Cultivation

Unit code	T/508/1467	**Guided Learning Hours (GLH)**	10
Unit level	3	**Total Qualification Time (TQT)**	40

Unit aim

The unit aims to provide learners with an understanding of why farmers cultivate the soil and what machines or tools they use under specific conditions. Learners will also become practiced in the work of soil cultivation.

In biodynamic systems healthy soil is the primary source of fertility on the farm. Therefore care of the soil is vital to working in biodynamic agriculture. Cultivation can have both positive and negative influences on the soil, so this unit aims to help learners understand both the theoretical and practical implications of soil cultivation.

Content overview

Learning outcome 1: Soil cultivation

Learners should be introduced to the effects of tillage and the methods, tools and machinery used (this should include consideration of plough or no-plough, minimum tillage, comparable hand cultivation techniques as well as human and animal mechanic power).

Learners should explore how different cultivation methods, tools and machinery affect different soil types and under what conditions. They should consider the timing of cultivations and the variables which should be taken into account when managing soil, for example: drainage, liming, compaction, moisture levels, aeration, erosion, leaching and weed control.

Learning outcome 2: Cultivating healthy soil

Learners should gain experience in independently using their judgement and knowledge to practically *cultivate a healthy* soil. This should include independent selection and use of a variety of tools and machinery, judging appropriate conditions for cultivation, performing primary and secondary cultivations and reflecting on the impact those cultivations have made. This should be done in the context of aiming to improve soil condition and fertility. It includes approaches to cultivation without tools (e.g. permaculture).

Learning outcomes **The learner will:**	Assessment criteria **The learner can:**
1. Understand soil cultivation	1.1 Describe aims of soil cultivation
	1.2 Discuss the impact of cultivation on the soil
	1.3 Describe soil cultivation practices on own holding
	1.4 Reflect on the effectiveness of soil cultivation practices on own holding
2. Be able to cultivate healthy soil	2.1 Demonstrate how to cultivate healthy soil
	2.2 Demonstrate appropriate usage of cultivation tools and machinery

Additional Requirements for Delivery

It is important for learners to understand the practical context of the knowledge and understanding learning outcomes contained within this unit. Learners should therefore be encouraged to relate their learning within this unit to their work-based farm and/or garden experiences.

BDFG-L3-unit7
Biodynamic Compost

Unit code	A/508/1468	**Guided Learning Hours (GLH)**	10
Unit level	3	**Total Qualification Time (TQT)**	30

Unit aim

The unit aims to provide learners with the knowledge, understanding and skills to make good compost on the farm or in the garden.

Compost is a vital part of soil improvement and an important consideration for the overall fertility and vitality of a biodynamic farm. This unit therefore provides learners with the opportunity to develop an understanding of theoretical and practical aspects of making and using compost.

Content overview

Learning outcome 1: Biodynamic compost
Learners should be introduced to the biodynamic approach to and understanding of compost: what processes occur on a physical level, which organisms are involved and the potential for compost to increase fertility on a physical level as well as on other levels. They will also consider the role of composted organic materials in the farm organism as well as different composts for different purposes.

Learning outcome 2: How to make biodynamic compost
Learners should be introduced to different types and structures of compost (which may include liquid manure, slurry, wormery, deep litter, muck heap, vegetable compost and vermiculture) and the possible components of compost, including plant and animal substances.
Learners should become familiar with the processes of building and caring for compost heaps including consideration of nitrogen/carbon ratio, moisture, temperature, aeration, structure, leaching, cover and skin, timing, as well as the use and application of biodynamic preparations.
Learners should be introduced to the different stages of compost, which organisms are involved, the effect of turning compost, and how to judge and monitor the quality of the composting process and readiness.
Learners should become familiar with the biodynamic preparations in terms of their substances (the difference between animal and plant substances in the context of etheric, astral and ego), dynamics and influence on fertility.

Learning outcomes **The learner will:**	Assessment criteria **The learner can:**
1. Understand biodynamic compost	1.1 Describe the biodynamic understanding of compost *This must include the relationship between biodynamic compost and the farm organism*
	1.2 Understand the fertility values of different biodynamic composts *This must include composts based on plant and animal materials*
2. Be able to make biodynamic compost	2.1 Demonstrate how to set up a biodynamic compost heap
	2.2 Demonstrate how to maintain biodynamic compost
	2.3 Assess the quality of biodynamic compost

Additional Requirements for Delivery

It is important for learners to understand the practical context of the *knowledge* and *understanding* learning outcomes contained within this unit. Learners should therefore be encouraged to relate their learning within this unit to their work-based farm and/or garden experiences.

BDFG-L3-unit8
Land-based Machinery

Unit code	F/508/1469	**Guided Learning Hours (GLH)**	20
Unit level	3	**Total Qualification Time (TQT)**	40

Unit aim

The unit aims to provide learners with the knowledge and skills to operate land-based machinery efficiently and safely. This includes basic maintenance, health and safety procedures as well as developing skills through practice.

The use of land-based machinery and associated implements is vital to both farming and gardening enterprises, so this unit aims to give learners the opportunity to gain knowledge and skills in this area.

Learners should be given the opportunity to become familiar with how land-based machinery and associated implements work, and which checks and inspections are necessary. Learners should become practiced in selecting appropriate machines and implements as well as performing daily and routine maintenance and adjustments.

Learners will develop kills in operating land-based machinery in an independent, safe and proficient manner and in attaching and detaching various implements and using them correctly.

This unit is related to and informed by the 'Soil Management' unit.

Content overview

Learning outcome 1: Land-based machinery on an enterprise
Learners should be introduced to the purpose and use of machines. They should gain insights into how different machines work (this may include: 2 stroke and 4 stroke engines, diesel, petrol, cooling, lubrication, hydraulics, electrical etc.) and how a variety of implements associated with those machines work. Learners should also become familiar with which machines and which implements are best suited to different tasks.

Learning outcome 2: Health and safety issues in the context of land-based machinery
Learners should become familiar with all aspects of health and safety associated with land-based machinery, including responsibilities, regulations, personal protective equipment and how to carry out a risk assessment.

Learning outcome 3: Operating land-based machinery
Learners should be able to prepare the machine (including pre-start checks) and any associated implements for use. They should then be able to operate the land-based machinery and any associated implements independently, safely and proficiently (this should include the use of personal protection equipment when appropriate).

Learners should also be aware of the importance of machinery manuals as a means of supporting their learning and to be used as a reference.
Depending on the individual holding, learners may have opportunities to develop skills in the operation of two wheel tractors, compact tractors or larger tractors and associated implements (i.e. attaching, detaching and adjusting implements – three point and PTO, using a trailer and using a front loader). They will also need to learn tractor and implement controls - dependent on the situation this may include: lawn mowers, brush cutters, forklift, quad bike etc.

Learning outcome 4: Maintaining land-based machinery
Learners should become familiar with the required maintenance tasks, as well as the timing of those tasks. This should include daily checks (oil, fuel and coolant), as well as periodical servicing (greasing, oil change, etc.), and minor repairs. Learners should also be able to recognise when it is helpful to call on expert advice.

Learning outcomes	Assessment criteria
The learner will:	**The learner can:**
1. Understand land-based machinery on an enterprise	1.1 Explain the mechanics of a range of land-based machines *This must include one engine driven machine, one PTO driven machine and one drawn machine.*
	1.2 Identify key parts of a land-based engine *This must include: ignition, starting motor, fuel system, combustion chamber, exhaust system, cooling system, oil and air filter, dynamo, alternator, battery, hydraulic system.*
	1.3 Explain how key parts of a land-based machine work *This may include any of the following: engine, ignition system, cooling system, electrical system, fuel system, exhaust system, lubrication system, hydraulic system.*

Learning outcomes **The learner will:**	Assessment criteria **The learner can:**
2. Understand how to meet land-based machinery health and safety requirements	2.1 Identify health and safety requirements for operating land-based machinery
	2.2 Carry out a risk assessment for the operation of a land-based machine
3. Be able to use land-based machinery	3.1 Demonstrate how to prepare a land-based machine for use
	3.2 Demonstrate how to operate a range of land-based machines *This must include: a tractor, PTO driven machine, trailer*
4. Be able to maintain land-based machinery	4.1 Carry out safety and wear and tear checks on a land-based machine *This may include any of the following land-based machines: tractor, rotavator, strimmer, PTO driven machine, hydraulic operated machine*
	4.2 Demonstrate how to carry out periodical servicing to a land-based engine

Additional Requirements for Delivery

It is important for learners to understand the practical context of the *knowledge* and *understanding* learning outcomes contained within this unit. Learners should therefore be encouraged to relate their learning within this unit to their work-based farm and/or garden experiences.

BDFG-L3-unit9
Plant Science and Phenomenology

Unit code	T/508/1470	**Guided Learning Hours (GLH)**	30
Unit level	3	**Total Qualification Time (TQT)**	40

Unit aim

This unit aims to provide learners with an understanding of the principles of healthy agricultural plants as well as the biodynamic concept of the plant as an organism that develops within the influences of both earth and cosmos.

A phenomenological approach to science underpins biodynamic agriculture. This unit therefore aims to provide learners with the opportunity to engage in a phenomenological process with plants and develop their ability to gain insight into plant life using a range of approaches.

Content overview

Learning outcome 1: Principles of healthy agricultural plants
Learners should be introduced to the major structures and functions of agricultural plants. External structures include: seeds, roots, shoots, stem, leaves, buds, flowers, and fruits. Major plant processes should also be considered, including: photosynthesis, cell division, growth, respiration, water and nutrient uptake, transportation (including Steiner's concepts of wood sap, living sap and cambium (Steiner, R, 2001)) and reproduction. Factors which influence these processes should be explored, including how human beings can work with or manipulate these processes. In all different life cycles there should be exploration of how the following vary: metamorphosis and development, germination, growth, reproduction and decay, sexual and asexual reproduction, vegetative and reproductive growth, primary and secondary growth of roots and shoots.
Learners should also explore internal structures and specialist cells in seeds.
Factors that influence the health of an agricultural plant should be considered, including quality of nutrients, stress factors from the environment and seed quality.
Preventative and remedial measures in biodynamic pest and disease control should be introduced.

Learning outcome 2: Biodynamic principles of earthly and cosmic influences on plant appearance
Learners should be introduced to the idea of the living plant as existing between and being influenced by the earth and cosmos. Both earthly and cosmic influences should be characterised and their influence on plants should be explored in the context of their form and life cycles (including ephemeral, annual, biennial and perennial life cycles).
This exploration should be framed in the approach of understanding the evolution of plants, taking into consideration the dynamics of contraction and expansion, the dynamics

of the four elements, the activities of elemental beings and the principles of the ethers, as articulated by Steiner and others (Steiner, R, 2001).

Learning outcome 3: Phenomenology toward understanding the living plant
Learners should be introduced to the concept, principles and objectives of phenomenology including Goethe's methods (Goethe, J, Miller, G, 2009). Goethe's idea of the archetypal plant and specifically leaf metamorphosis should be introduced. Learners should also be given the opportunity to practice phenomenological observation skills and reflect on the observations made.

Learning outcomes	Assessment criteria
The learner will:	**The learner can:**
1. Understand the principles of healthy agricultural plants	1.1 Explain functions within healthy agricultural plants *This must include: Growth, breathing, reproduction, influence of external factors*
	1.2 Discuss factors which support healthy agricultural plants
	1.3 Discuss pest and disease management approaches which support healthy agricultural plants
2. Know biodynamic principles of earthly and cosmic influences on plant appearance	2.1 Identify biodynamic principles of earthly and cosmic influences on plant appearance
3. Be able to use phenomenology to understand a living plant	3.1 Use phenomenology to understand a living plant This must include: The use of Goethe's concept of leaf metamorphosis and one other method
4. Be able to reflect on the value of a phenomenological process as a means of understanding a living plant	4.1 Reflect on the value of a phenomenological process as a means of understanding a living plant

Additional Requirements for Delivery

It is important for learners to understand the practical context of the *knowledge* and *understanding* learning outcomes contained within this unit. Learners should therefore be encouraged to relate their learning within this unit to their work-based farm and/or garden experiences.

BDFG-L3-unit10
Biodynamic Seeds

Unit code	A/508/1471	**Guided Learning Hours (GLH)**	10
Unit level	3	**Total Qualification Time (TQT)**	20

Unit aim

This unit aims to explore the importance of seeds and the source of seeds for a biodynamic farm.

The source of seeds has become an extremely important issue for biodynamic farming and gardening. As such, learners will be encouraged to explore the issue of seed ownership and growing methods. They will also examine the practicalities of seeds on their own holding, including how to source seeds and the possibilities of using own seeds.

This unit is closely related to the 'Plant Science and Phenomenology' unit. The two units would benefit from being taught in an integrated way.

Content overview

The principles of seed development in plants

Learners should be introduced to the principles of seed development in plants, with specific emphasis on plant breeding, including the Mendelian approach to genetics, different kinds of pollination, perfect and simple flowers, in-breeders and out-breeders and the difference between dioecious and monecious plants. Learners will consider the profile of a farm, assessing the farm's individuality as a means for understanding its holistic profile.

The biodynamic approach to seed growing

Learners should be encouraged to explore different kinds of seed growing including open-pollinated, hybrid and genetically modified. Issues of somatic and cytoplasmic fusion should be discussed, as should genetic modification within species and cross-species.

Learners should become aware of the Demeter production standards, the recommendations for biodynamic seed growing and the certification issues around seeds.

How to produce biodynamic seeds

Learners should be introduced to the steps in biodynamic seed growing, including selection criteria for choosing plants to produce seeds (size, flavour, health, disease and pest resistance etc.), harvesting seeds and then the processes of drying, cleaning, storage.

This may include discussion of how different areas of the farm can produce seeds, possibly including vegetable growing, cereals, flowers, grasslands and forage crops. The idea of the farm organism is also a structuring principle for the Demeter Standards. Learners should be encouraged in their understanding of the principle base of these standards.

Learning outcomes **The learner will:**	Assessment criteria **The learner can:**
1. Understand principles of seed growing	1.1 Describe seed growing in the natural world *This must include at least four types of seed growing*
	1.2 Discuss artificial approaches to seed growing *This must include at least two types of artificial seed growing*
2. Understand biodynamic principles of supporting seed growing	2.1 Summarise the Demeter Standards for seeds
	2.2 Explain biodynamic principles of supporting seed growing *This must include: biodynamic methods for enhancing the quality of seeds; reasons for using biodynamic methods of seed growing*
3. Understand how to produce biodynamic seeds	*3.1* Describe the process of producing biodynamic seeds

Additional Requirements for Delivery

It is important for learners to understand the practical context of the *knowledge* and *understanding* learning outcomes contained within this unit. Learners should therefore be encouraged to relate their learning within this unit to their work-based farm and/or garden experiences.

BDFG-L3-unit11
Animal Science and Phenomenology

Unit code	F/508/1472	**Guided Learning Hours (GLH)**	30
Unit level	3	**Total Qualification Time (TQT)**	40

Unit aim

This unit aims to provide learners with an introduction to animal physiology as well as a broader, more holistic understanding of animals.

A holistic approach to science is an approach that underpins biodynamic agriculture. As such this unit introduces that approach to science in the realm of animals. This unit provides an opportunity for learners to improve their own observation skills of animals and to encourage a more holistic understanding of the animal's relationship to the farm organism, including both physical and non-physical aspects.

Content overview

Learning outcome 1: Basic principles of supporting healthy domesticated animals
Learners should be introduced to the fundamental principles of animal anatomy including the three major systems (nerve-sense, rhythmic and metabolic). They should explore how many animals reveal a different emphasis in their physiology and anatomy. Specific consideration should be given to the anatomy of digestive system as a part of the metabolic system and the difference between ruminant and monogastric digestive systems.
Learners should be given the opportunity to explore a particular system across different species of animal, specifically focusing on how this system is reflected in animal skeletons.

Learning outcome 2: Phenomenology as a means of understanding the healthy development of domesticated animals
Learners should be introduced to the use of phenomenological observation skills as described by Goethe and others (Goethe J and Miller, J, 2009) for observing the animal kingdom. The concept of metamorphosis between species should be explored through drawing, comparing skeletons, skulls and metabolic systems. Learners should reflect on their phenomenological observations. The concept of the three groups of mammals, rodents, carnivores and hoofed animals should also be explored.
The idea of the 'gesture' and 'being' of an animal as described by Goethe and Schad (among others) (Shad, W, 1978) should be considered including ways of understanding this concept and perceiving the 'gesture' and 'being' of an animal. Learners should be introduced to the idea that the 'gesture' and 'being' of an animal may be reflected in their physiology.

Learning outcome 3: The role of animals on a biodynamic farm
The 'being' of an animal as described by Goethe and Schad among others affects and is affected by its environment. Learners should be given the opportunity to observe this

interaction, which may lead to discussions of the animal in its environment, how it is related to its landscape and how domestication may influence an animal. Learners should then explore how this environment is not limited to the physical environment, but includes the cosmic as well.
This principle then can be applied to the relationship between an animal and the wider farm organism as described by Steiner in chapters 2 and 8 of the Agriculture Course, (Steiner, R 1997). Learners should include consideration of the being of the animal and how the farm supports this, but also how the 'gesture and being' of the animal contributes to the farm organism. Specific attention to the quality of manure should be taken into account.

Learning outcomes **The learner will:**	Assessment criteria **The learner can:**
1. Understand basic principles of supporting healthy domesticated animals	*1.3* Explain appropriate feed for healthy ruminant and monogastric digestive systems
	1.4 Describe appropriate housing for domesticated animals *This must include one ruminating and one monogastric type of animal*
2. Be able to use phenomenology to understand healthy development of domesticated animals	2.3 Use phenomenology to understand healthy development of domesticated animals *This must include: Observations of appearance, skeleton and behaviour*
3. Understand the role of animals on a biodynamic farm	3.2 Explain how animals contribute to the biodynamic farm as an organism *This must include one ruminating and one monogastric type of animal*
4. Be able to reflect on the value of a phenomenological process as a means of understanding domesticated animals	4.1 Reflect on the value of a phenomenological process as a means of understanding domesticated animals

Additional Requirements for Delivery

It is important for learners to understand the practical context of the *knowledge* and *understanding* learning outcomes contained within this unit. Learners should therefore be encouraged to relate their learning within this unit to their work-based farm and/or garden experiences.

BDFG-L3-unit12
Biodynamic Preparations

Unit code	J/508/1473	**Guided Learning Hours (GLH)**	20
Unit level	3	**Total Qualification Time (TQT)**	30

Unit aim

This unit aims to introduce learners to the principles and practice of making and using the biodynamic preparations.

The biodynamic preparations are at the heart of biodynamic farming and gardening as they articulate both the principled approach and the practical implications of working with the land. This unit therefore gives learners the opportunity to become familiar with the principles and practices in the application of the preparations. For this unit the term biodynamic preparations will include the compost and spray preparations (500 to 508), peppers, cow pat pit and tree paste.

Content overview

Learning outcome 1: How to make the biodynamic preparations

Learners should be introduced to the different components of the biodynamic preparations (both compost and spray: 500 to 508), peppers, tree paste and cow pat pit, as well as the processes and timings involved in their production. Learners should also become familiar with how the preparations should be stored, how they should be prepared for use (including different stirring methods) and how they should be used (different application methods).

Attention should be paid to current regulations and Demeter production standards.

Where possible discussion about alternative preparations and current research in this area (for example Nastati, Podolinski, Erbe and Klocek) should be encouraged.

Learning outcome 2: The principles of the biodynamic preparations
Learners should be introduced to the principles behind the preparations, the dynamic aspects of different components and how they may work together in supporting fertility. This should include discussion of both animal and plant components in their qualitative nature (for example the difference between horns and antlers, different organs, the qualitative nature of different plants) as well as the timing and dynamics of making and using different preparations. Where appropriate relevant research should be included (Lily Kolisko for example).

Learning outcome 3: Applying the biodynamic preparations
Learners should become practiced in preparing biodynamic preparations for application to compost, land and plants. Application should take into account timing (season, weather, time of day and plant stage), quantities and the Demeter production standards.

Learning outcomes **The learner will:**	Assessment criteria **The learner can:**
1. Understand how to make biodynamic preparations	1.1 Identify the ingredients for preparations 500 to 508
	1.2 Describe how to make biodynamic preparations 500 to 508
	1.3 Explain the process of making a biodynamic pepper
2. Understand the principles of biodynamic preparations	2.1 Discuss the principles of biodynamic preparations 500 to 508 *This must include: potential uses of preparations; possible impacts of the preparations*
3. Be able to apply biodynamic preparations 500 to 507	3.1 Demonstrate how to apply biodynamic preparations 500 to 507

Additional Requirements for Delivery

It is important for learners to understand the practical context of the *knowledge* and *understanding* learning outcomes contained within this unit. Learners should therefore be encouraged to relate their learning within this unit to their work-based farm and/or garden experiences.

BDFG-L3-unit13
Biodynamic Habitat Management

Unit code	L/508/1474	**Guided Learning Hours (GLH)**	10
Unit level	3	**Total Qualification Time (TQT)**	20

Unit aim

The unit aims to provide learners with the knowledge, understanding and skills to identify, create and maintain habitats which support ecological diversity within the wider landscape of the farm.

Understanding the presence and relationships of habitats on the farm is vital in understanding the biodynamic farm organism as a whole. These elements may include wild places and wild life on the farm such as trees, shrubs, ponds, watercourses, hedges, grasslands, birds, insects and mammals.

Content overview

Learning outcome 1: The influence of agriculture on the landscape
Learners should be introduced agriculture and its relationship to landscape over the course of history. This may include some of the following developments: primeval, medieval, pre-enclosure, enclosure, industrial revolution, post 1940s and modern day agriculture.
Having established the historical relationship between agriculture and the landscape, some consideration should be paid to the effect of modern agriculture on the landscape and how current legislation regards the conservation of wildlife habitats and protected species. This should include protected species legislation and possible available grants, for example the Environmental Stewardship Scheme.

Learning outcome 2: How landscape ecology contributes to biodynamic agriculture
Learners should be introduced to the approach of biodynamic agriculture in diversifying the landscape ecology of the farm organism. This should include an awareness of the Demeter production standards.

Learning outcome 3: The habitat diversity on own holding
Learners should be introduced to ways in which to understand habitat diversity and the relationship between these habitats (for example in wildlife corridors). Learners should also become familiar with a variety of assessments in this area for example whole farm assessment, hedge row survey, farmland bird survey, arable plant survey, grass land species, eco-logical features and the LEAF survey.
Learners should assess one specific area of habitat diversity and explore how that habitat is related to others.
By using these tools learners can reflect on the habitat diversity of their own holding and suggest improvements.

Learning outcomes **The learner will:**	Assessment criteria **The learner can:**
1. Understand the relationship between agriculture and landscape ecology	1.1 Illustrate how agriculture has shaped a landscape
	1.2 Discuss current environmental legislation related to agriculture
2. Understand how landscape ecology contributes to biodynamic agriculture	2.1 Explain how landscape ecology contributes to biodynamic agriculture
3. Understand the habitat diversity on own holding	3.2 Assess the habitat diversity of own holding
	3.3 Assess ways to improve the diversity of habitat on own holding

Additional Requirements for Delivery

It is important for learners to understand the practical context of the *knowledge* and *understanding* learning outcomes contained within this unit. Learners should therefore be encouraged to relate their learning within this unit to their work-based farm and/or garden experiences.

BDFG-L3-unit14
Agricultural Astronomy

Unit code	R/508/1475	**Guided Learning Hours (GLH)**	20
Unit level	3	**Total Qualification Time (TQT)**	30

Unit aim

This unit aims to provide learners with an understanding of astronomy in the context of the biodynamic approach to agriculture.

The biodynamic approach to farming and gardening takes into account cosmic as well as earthly influences. Learners should become familiar with basic astronomical ideas and terminology so that they can make use of this knowledge in biodynamic practice.

The unit 'Introduction to Anthroposophy' provides a useful context for this unit.

Content overview

Learning outcome 1: Astronomical concepts relevant to biodynamic practice
Learners should be introduced to basic astronomical concepts that play an important role in biodynamic agriculture. This should include the difference between the geocentric and heliocentric views of the solar system; different rhythms and cycles of the moon (waxing/waning, ascending/descending, apogee/perigee, moon nodes); different rhythms of the planets in the solar system (including their orbits, but also their changing relationships in conjunctions, oppositions, trines and squares); and ways of understanding the twelve signs of the zodiac (sidereal/tropical and the ecliptic).

Learning outcome 2: Relevance of astronomy for biodynamic agriculture
Learners should be introduced to how basic astronomical concepts contribute to biodynamic practice. This should include how the inner (Venus, Mercury and Moon) and outer (Saturn, Jupiter and Mars) planetary rhythms may affect the different aspects of the farm organism.
Learners should become familiar with how the classical elements (Earth, Water, Air and Fire) are at work in different parts of the plant, and the relationship of this to the moon and constellations in the zodiac.
Learners should also explore the relationship of the other rhythms of the moon (apogee and perigee for example) and their influence on the farm organism.

Learning outcome 3: Incorporating astronomical concepts into biodynamic practice
Learners should become familiar with ways in which to access information about astronomical rhythms. Learners should understand how to use a planting calendar in forward planning (for example in a sowing plan or other working plan), taking into account understanding of basic astronomical concepts and how they contribute to biodynamic practice.

Learning outcomes **The learner will:**	Assessment criteria **The learner can:**
1. Understand astronomical concepts relevant to biodynamic agriculture	1.1 Explain moon rhythms
	1.2 Explain planetary movements from a geocentric perspective
2. Understand the relevance of basic astronomical concepts to biodynamic agriculture	2.1 Explain the significance of moon rhythms to biodynamic agriculture
	2.2 Explain the significance of planetary rhythms to biodynamic agriculture
3. Be able to use an astronomical planting calendar to support biodynamic practice	3.1 Demonstrate how an astronomical planting calendar can be used to support biodynamic practice

Additional Requirements for Delivery

It is important for learners to understand the practical context of the *knowledge* and *understanding* learning outcomes contained within this unit. Learners should therefore be encouraged to relate their learning within this unit to their work-based farm and/or garden experiences.

BDFG-L3-unit15
Introduction to Anthroposophy

Unit code	D/508/1477	**Guided Learning Hours (GLH)**	10
Unit level	3	**Total Qualification Time (TQT)**	20

Unit aim

The unit aims to provide learners with an introduction to the philosophy that stands behind and informs biodynamic agriculture.

Anthroposophy as articulated by Rudolf Steiner (see reading list) is the philosophical approach which forms the basis for biodynamic farming and gardening. Understanding concepts from this philosophical approach and its language is therefore vital to learners' developing understanding of biodynamic farming and gardening.

This unit has strong contextual links to other units within the qualification including 'People and Agriculture' and the 'Soil', 'Plant' and 'Animal' Phenomenology units.

Content overview

Learning outcome 1: Principles of anthroposophy relevant to biodynamics
Learners should be introduced to fundamental ideas and specific terminology in anthroposophy. This may include: the explanation of the word anthroposophy, some biographical aspects of Rudolf Steiner, the four classical elements of Earth, Water, Air and Fire; how these four elements find expression in nature and in the human being; the four kingdoms in relation to the four-fold nature of the human being (physical, etheric, astral, ego); the development of human beings in these terms; the view of body, soul and spirit as one way of understanding the human experience; the three-fold nature of soul activity (thinking, feeling and willing).

Learning outcome 2: Principles of human development relevant to biodynamic farming and gardening
Learners should be introduced to the changing consciousness of human beings in both historical and biographical terms (including an introduction to the evolution of consciousness and an introduction to the wider view of planetary evolution).

Learning outcomes **The learner will:**	Assessment criteria **The learner can:**
1. Understand key principles of Steiner's philosophical approach, anthroposophy, and how it informs biodynamics	1.1 Describe the role of thinking, feeling and willing in Steiner's model of a three-fold human being
	1.2 Discuss the relationship between the four aspects of the human being and the kingdoms of nature
2. Understand Steiner's principles of human development relevant to biodynamics	2.1 Describe Steiner's principles of human development in terms of the stages of planetary evolution
	2.2 Discuss Steiner's principles of the development of human consciousness

Additional Requirements for Delivery

It is important for learners to understand the practical context of the *knowledge* and *understanding* learning outcomes contained within this unit. Learners should therefore be encouraged to relate their learning within this unit to their work-based farm and/or garden experiences.

BDFG-L3-unit16
Nature and Human Life

Unit code	H/508/1478	**Guided Learning Hours (GLH)**	10
Unit level	3	**Total Qualification Time (TQT)**	20

Unit aim

This unit aims to explore the agricultural, seasonal and human rhythms of the year and how they are related.

Agriculture has given rise to culture, but they both maintain a connection with the seasonal rhythms of the year. This unit explores these relationships and encourages learners to take an active participatory role in the seasonal celebrations of their own holding.

Content overview

Learning outcome 1: Impact of daily and seasonal rhythms on agriculture
Learners should be introduced to natural rhythms including both daily and seasonal rhythms. Learners should explore how these rhythms reflect the cycles of the earth from a qualitative and agricultural perspective. They should then be encouraged to discuss the practical agricultural implications of these rhythms in the work of the agricultural day (for example sowing, transplanting or milking) and agricultural year (breeding, harvesting, making or using preparations etc.).

Learning outcome 2: How awareness of nature can enhance cultural life
Learners should be introduced to different cultural festivals and their relationship to natural rhythms. Learners should also be encouraged to explore the task and purpose of agriculture in connection to the culture of individuals, community and nature.
Out of their own observations of culture and agriculture on the holding, learners should be encouraged to develop a sense for how to develop this connection in an active and participatory way. Developing senses to observe and experience rhythms and seasons.

Learning outcomes	Assessment criteria
The learner will:	**The learner can:**
1. Understand how daily and seasonal rhythms inform agriculture	1.1 Describe effects of daily and seasonal rhythms on plants *This must include the effect of water and warmth in plants*

Learning outcomes **The learner will:**	Assessment criteria **The learner can:**
	1.2 Outline how daily and seasonal rhythms may inform daily and seasonal agricultural work *This must include approaches to planning and care of soil and plants*
2. Understand how awareness of nature can enhance cultural life	2.1 Outline ways in which nature has informed own culture
	2.2 Reflect on ways nature enhances own life
	2.3 Reflect on ways nature could enhance cultural life in contemporary society

Additional Requirements for Delivery

It is important for learners to understand the practical context of the *knowledge* and *understanding* learning outcomes contained within this unit. Learners should therefore be encouraged to relate their learning within this unit to their work-based farm and/or garden experiences.

BDFG-L3-unit17
Nutrition and Food

Unit code	K/508/1479	**Guided Learning Hours (GLH)**	10
Unit level	3	**Total Qualification Time (TQT)**	20

Unit aim

This unit aims to introduce learners to the biodynamic approach to nutrition.

One of the ways in which biodynamic agriculture may have a contribution to make to the health and wellbeing of humankind is through nutrition. As producers of biodynamic food, practitioners should become aware of how biodynamic practices may impact the quality of food. Learners will be encouraged to consider what possible difference this may make to human nutrition for development, wellbeing and health.

Content overview

Learning outcome 1: Concepts in human nutrition from an anthroposophical approach

Learners should be introduced to the anthroposophical approach to nutrition. This should include an introduction to cosmic and earthly nutrition, an introduction to how nutrition has changed over time, an overview of the dynamics of different food substances (proteins, fats, carbohydrates and minerals), the role of nutrition in supporting human senses and the role of the senses in nutrition.

Learners should also consider the relationship of the plant to the human being, with specific attention paid to the different parts of the plant and how they nourish the human being differently.

In the context of the anthroposophical approach to biodynamic food and nutrition, learners should discuss the relationship between food and well-being, contemporary issues in nutrition and the role of biodynamic food in human health and development.

Learning outcome 2: Food in human development

Learners should explore how food has the potential to influence human development. Issues like wellbeing, health and growth, as well as quality, quantity and diversity of food should be discussed. Current issues such as ‘feeding the world’, fast food, cheap food and health related challenges should be explored.

Learning outcomes **The learner will:**	Assessment criteria **The learner can:**
1. Understand how biodynamic principles apply to human nutrition	1.1 Explain biodynamic principles of nutrition *Must include: role of nutrition in supporting senses; biodynamic principles of cosmic and earthly nutrition*
	1.2 Explain Rudolf Steiner's principles of how plants contribute to human nutrition *Must include: biodynamic principles of how roots and fruits can influence the human body*
2. Understand how biodynamic food may contribute to a healthy lifestyle	2.1 Discuss how biodynamic food may contribute to a healthy lifestyle *This may include any of the following impacts: holistic health benefits; non-physical impacts such as cognitive, emotional or spiritual well-being; stamina.*

Additional Requirements for Delivery

It is important for learners to understand the practical context of the *knowledge* and *understanding* learning outcomes contained within this unit. Learners should therefore be encouraged to relate their learning within this unit to their work-based farm and/or garden experiences.

BDFG-L3-unit18
Enterprise Planning

Unit code	D/508/1480	**Guided Learning Hours (GLH)**	10
Unit level	3	**Total Qualification Time (TQT)**	40

Unit aim

The unit aims to provide learners with the knowledge and skills needed to plan the finances of an enterprise over the course of one year. This is with the aim that learners will be able to make a business plan for an enterprise. In the context of this unit, an enterprise is defined as an area of activity within a farm or horticultural operation.

The aim of this qualification is to prepare learners to manage an enterprise within a gardening or farming operation. As such this unit is key in that it address the necessary financial and business planning skills (alongside practical, technical and social skills) to carry out this aim.

This unit should be taught in relation to units which address social and economic structures in agriculture such as 'People and Agriculture'. This can help inform the practical implications of more theoretical planning and decision making.

Content overview

Learning outcome 1: The role of financial management tools in running a small enterprise

Learners should be introduced to the different financial tools for managing an enterprise which include: gross margins, profit and loss, cash flow, budgeting, balance sheet, record-keeping, fixed/variable costs, income and expenditure, revenue and capital, VAT, depreciation and management (ledger) accounts.

Learners should be introduced to how annual management patterns (timing, cash flow, labour projection, supplies and markets etc.) have an influence on the finances of an enterprise. Learners should be introduced to hidden economic values of seeming unproductive parts of an enterprise, e.g. marketing value.

Learning outcome 2: Business planning for a land based enterprise

Learners should be introduced to business plans and should learn how to use templates to write a business plan for a farm based enterprise. This should include enterprise outline, potential income streams (for example: CSA, farm shop, wholesale, value-added products, education-al, recreational and therapeutic, services) and the potential for: products, markets, services, grants, unique selling points, cost implications of preparation for sale (aesthetics, packaging, labelling as necessary etc.), economic details and summery.

Learning outcomes **The learner will:**	Assessment criteria **The learner can:**
1. Understand the role of financial management tools in running a small enterprise	1.1 Explain the purpose of financial management tools for running a small enterprise *This must include: the purpose of planning tools for labour management, income and expenditure, cash flow forecast, profit and loss, balance sheet*
	1.2 Assess the financial viability of an enterprise using financial management tools *This may include: labour costs, income and expenditure, cash flow forecast, profit and loss, balance sheet*
2. Understand approaches to business planning	2.1 Compare and contrast two examples of a business plan

Additional Requirements for Delivery

It is important for learners to understand the practical context of the *knowledge* and *understanding* learning outcomes contained within this unit. Learners should therefore be encouraged to relate their learning within this unit to their work-based farm and/or garden experiences.

BDFG-L3-unit19
Reflective Practice, Learning and Development

Unit code	H/508/1481	**Guided Learning Hours (GLH)**	10
Unit level	3	**Total Qualification Time (TQT)**	60

Unit aim This unit aims to help learners become conscious of their personal and professional development journey over the course of the qualification and to provide learners with an opportunity to engage in an individual development activity relevant to the qualification.

Content overview

Learning outcome 1: Reflecting on own learning and development journey
Learners should be encouraged to articulate their own personal and professional expectations in the initial stages of the qualification. Reviews throughout the qualification should enable and encourage learners to document how these expectations change. In the final stages of the qualification learners should be encouraged to reflect on their personal development as a whole. Learners should be introduced to personal development tools and exercises which can support this process.

Learning outcome 2: Biodynamic agriculture in the context of other approaches
Learners should consider the biodynamic approach to farming and gardening compared to other alternative approaches such as organics, permaculture, urban agriculture and holistic management. Learners should explore areas such as tillage, approaches to soil fertility, planting planning and the inclusion of animals.

Learning outcome 3 – 5: Professional development activity
The following explanation of what constitutes an activity is provided for guidance: This might be a project or individual activity identified by the leaner in conjunction with tutors or a work-based supervisor or mentor. Learners should identify somebody to mentor them throughout the activity who has expertise in the identified field (e.g. soil, plant, animal explorations, water conservation, biodynamic preparations, building, process improvements etc.)

Learning outcomes **The learner will:**	Assessment criteria **The learner can:**
1. Be able to reflect on own learning and development journey	1.1 Reflect on own learning and development journey during this qualification *This must include reflections over the duration of the qualification: reflections of initial personal and professional development aspirations; reflections on how aspirations change or are met during the qualification; reflections of achievements towards the end of the qualification; reflections on further areas of learning and development.*
2. Be able to reflect on Biodynamic agriculture in the context of other approaches to agriculture	1.2 Reflect on Biodynamic agriculture in the context of other approaches to agriculture *This must include at least two other approaches which may be taken from the following: organics, permaculture, urban agriculture and holistic management*
3. Understand how to initiate a work-based professional development activity	3.1 Identify a work-based professional development activity on own holding *This must include: rationale and planned outcome of the activity.*
	3.2 Create a work-based professional development activity plan *This must include: identification of own skills relevant to the activity; identification of support likely to be required; tools/materials required; timeline outlining stages of the activity.*
4. Be able to carry out a work-based professional development activity on own holding	4.1 Carry out a work-based professional development activity on own holding

Learning outcomes **The learner will:**	Assessment criteria **The learner can:**
5. Be able to evaluate own process during a professional development activity	5.1 Evaluate own process during a professional development activity *This may include: personal or professional challenges, successes and lessons learned.*

Additional Requirements for Delivery

It is important for learners to understand the practical context of the *knowledge* and *understanding* learning outcomes contained within this unit. Learners should therefore be encouraged to relate their learning within this unit to their work-based farm and/or garden experiences.

BDFG-L3-unit20
Biodynamic Vegetable Growing

Unit code	K/508/1482	**Guided Learning Hours (GLH)**	50
Unit level	3	**Total Qualification Time (TQT)**	200

Unit aim

This unit aims to provide learners with the knowledge, understanding and skills necessary to manage a vegetable growing enterprise as part of a biodynamic farm organism.

A biodynamic grower can develop the management, planning and practical skills to manage a vegetable growing enterprise by developing a more comprehensive understanding of plants, their processes and their role in the farm organism. (as articulated in the Plant Science and Phenomenology unit in the same programme).

This unit is closely related to the following units and may benefit from being delivered in an integrated way: 'Biodynamic Farm Fertility', 'Soil Management' and 'Enterprise Planning'.

Content overview

Learning outcome 1: The planning of a biodynamic vegetable growing enterprise
Learners should develop knowledge and understanding related to planning a vegetable growing enterprise. This should include the following considerations: physical requirements (site, irrigation, tools, equipment, machinery, storage, processing etc.), history of the site, fertility building, crop rotation, plant health, cultivations, weed control, protected growing, timing, labour requirements, potential markets, and use of the biodynamic preparations.
Learners should examine carefully the relationships of the vegetable growing enterprise with the wider farm organism.

Learning outcome 2: Biodynamic principles of vegetable growing
Learners may consider how the diversity of the farm organism is supported by vegetable growing. They should also explore the interdependence of vegetables to other elements of the farm organism for example fertility exchange.
Learners should be introduced to biodynamic principles of fertiliser, soil fertility, soil management, approaches to weeds, pest and disease control.

Learning outcome 3: Managing a biodynamic vegetable growing enterprise
Learners should acquire all necessary skills required for managing a vegetable growing enterprise. Learners will be encouraged to accurately reflect on the vegetable growing enterprise over the course of a year, with specific consideration of their own role and capacities in that management. As part of this reflection learners should be encouraged to suggest improvements to the vegetable growing enterprise.

Learning outcome 3: Reflection of own professional development needs in vegetable growing
Learners should consider their areas of skill, knowledge and experience, identifying where additional development is required in relation to vegetable growing.

Learning outcomes **The learner will:**	Assessment criteria **The learner can:**
1. Be able to plan a biodynamic vegetable growing enterprise	1.1 Design a vegetable growing plan
	1.2 Create a seed and plant order, based on the growing plan
2. Understand biodynamic principles of vegetable growing	2.1 Describe biodynamic approaches to supporting fertility in vegetable growing
	2.2 Describe biodynamic approaches to soil management for vegetable growing
	2.3 Describe biodynamic approaches to weeds, pest and disease management for vegetable growing
	2.4 Explain the relationship between a vegetable growing enterprise and the farm organism
3. Be able to manage a biodynamic vegetable growing enterprise	3.1 Demonstrate how to establish a growing plan for vegetable growing
	3.2 Demonstrate how to implement vegetable crop maintenance
	3.3 Demonstrate how to get produce ready for distribution

Learning outcomes **The learner will:**	Assessment criteria **The learner can:**
	3.4 Demonstrate how to manage time and labour on a vegetable growing enterprise
4. Be able to reflect on own professional development needs in vegetable growing	4.1 Reflect on own professional development needs in vegetable growing

Additional Requirements for Delivery

The Guided Learning Hours for this unit should take place within a work-based learning environment (either on a farm or garden), under the supervision of an employer or other supervising subject expert. The intrinsic practical subject matter of this unit requires substantial practical experience; therefore a significant proportion of the learning hours are attributed to independent work-based learning.

BDFG-L3-unit21
Biodynamic Fruit Growing

Unit code	M/508/1483	**Guided Learning Hours (GLH)**	50
Unit level	3	**Total Qualification Time (TQT)**	200

Unit aim

This unit aims to provide learners with the knowledge, understanding and skills necessary to manage a fruit growing enterprise as part of a biodynamic farm organism.

A biodynamic grower needs to develop the management, planning and practical skills to manage a fruit growing enterprise. This process is supported by understanding plants, their processes and their role in the farm organism, as articulated in the Plant Science and Phenomenology unit.

This unit may benefit from being delivered in parallel with related units such as the 'Biodynamic Farm Fertility' and 'Soil Management' units.

Content overview

Learning outcome 1: The planning of a biodynamic fruit growing enterprise
Learners should develop knowledge and understanding related to planning of a fruit growing enterprise. This should include the following considerations: physical requirements (site, irrigation, training/support systems, tools, equipment, machinery, storage, processing etc.), history of the site, fertility building, crop rotation, plant health, cultivations, weed control, protected growing, timing, labour requirements, potential markets, and use of the biodynamic preparations.
Learners should examine carefully the relationships of the fruit growing enterprise with the wider farm organism.

Learning outcome 2: Biodynamic principles of fruit growing
Learners may consider how the diversity of the farm organism is supported by fruit growing. They should also explore the interdependence of fruit to other elements of the farm organism for example fertility exchange.
Learners should be introduced to biodynamic principles of fertiliser, soil fertility, soil management, approaches to weeds, pest and disease control.

Learning outcome 3: Managing a biodynamic fruit growing enterprise
Learners will need to develop all necessary skills required for managing a fruit growing enterprise. Learners will be encouraged to accurately reflect on the fruit growing enterprise over the course of a year, with specific consideration of their own role and capacities in that management. As part of this reflection learners should be encouraged to suggest improvements to the fruit growing enterprise.

Learning outcome 4: Reflection of own professional development needs in fruit growing

Learners should consider their areas of skill, knowledge and experience, identifying where additional development is required in relation to fruit growing.

Learning outcomes **The learner will:**	Assessment criteria **The learner can:**
1. Be able to plan a biodynamic fruit growing enterprise	1.1 Design a fruit growing plan
	1.2 Create a plant order, based on the growing plan
2. Understand biodynamic principles of fruit growing	2.1 Describe biodynamic approaches to supporting fertility in fruit growing
	2.2 Describe biodynamic approaches to soil management for fruit growing
	2.3 Describe biodynamic approaches to weeds, pest and disease management for fruit growing
	2.4 Explain the relationship between a fruit growing enterprise and the farm organism
3. Be able to manage a biodynamic fruit growing enterprise	3.1 Demonstrate how to establish a growing plan for fruit growing
	3.2 Demonstrate how to implement fruit crop maintenance
	3.3 Demonstrate how to get produce ready for distribution

Learning outcomes **The learner will:**	Assessment criteria **The learner can:**
	3.4 Demonstrate how to manage time and labour on a fruit growing enterprise
4. Be able to reflect on own professional development needs in fruit growing	4.1 Reflect on own professional development needs in fruit growing

Additional Requirements for Delivery

The Guided Learning Hours for this unit should take place within a work-based learning environment (either on a farm or garden), under the supervision of an employer or other supervising subject expert. The intrinsic practical subject matter of this unit requires substantial practical experience; therefore a significant proportion of this unit's learning hours are attributed to independent work-based learning.

BDFG-L3-unit22
Biodynamic Flower Growing

Unit code	T/508/1484	**Guided Learning Hours (GLH)**	50
Unit level	3	**Total Qualification Time (TQT)**	200

Unit aim

This unit aims to provide learners with the knowledge, understanding and skills necessary to manage a flower growing enterprise as part of a biodynamic farm organism.

A biodynamic grower needs to develop the management, planning and practical skills to manage a flower growing enterprise. This unit aims to support this process by developing learners' wider understanding of plants, their processes and their role in the farm organism, as articulated in the Plant Science and Phenomenology unit.

This unit may benefit from being delivered in parallel with other related units including the 'Biodynamic Farm Fertility', 'Soil Management' and 'Enterprise Management' units.

Content overview

Learning outcome 1: Planning a biodynamic flower growing enterprise
Learners should develop knowledge and understanding related to planning a flower growing enterprise. This should include the following considerations: physical requirements (site, irrigation, tools, equipment, machinery, storage, processing etc.), history of the site, fertility building, crop rotation, plant health, cultivations, weed control, protected growing, timing, labour requirements, potential markets, and use of the biodynamic preparations.
Learners should examine carefully the relationships of the flower growing enterprise with the wider farm organism.

Learning outcome 2: Biodynamic principles of flower growing
Learners may consider how the diversity of the farm organism is supported by flower growing. They should also explore the interdependence of flowers to other elements of the farm organism for example fertility exchange.
Learners should be introduced to biodynamic principles of fertiliser, soil fertility, soil management, approaches to weeds, pest and disease control.

Learning outcome 3: Managing a biodynamic flower growing enterprise
Learners should acquire all necessary skills required for managing a flower growing enterprise. Learners will be encouraged to accurately reflect on the flower growing enterprise over the course of a year, with specific consideration of their own role and capacities in that management. As part of this reflection learners should be encouraged to suggest improvements to the flower growing enterprise.

Learning outcome 4: Reflection of own professional development needs in flower growing

Learners should consider their areas of skill, knowledge and experience, identifying where additional development is required in relation to flower growing.

Learning outcomes **The learner will:**	Assessment criteria **The learner can:**
1. Be able to plan a biodynamic flower growing enterprise	1.1 Design a flower growing plan
	1.2 Create a seed and plant order, based on the growing plan
2. Understand biodynamic principles of flower growing	2.1 Describe biodynamic approaches to supporting fertility in flower growing
	2.2 Describe biodynamic approaches to soil management for flower growing
	2.3 Describe biodynamic approaches to weeds, pest and disease management for flower growing
	2.4 Explain the relationship between a flower growing enterprise and the farm organism
3. Be able to manage a biodynamic flower growing enterprise	3.1 Demonstrate how to establish a growing plan for flower growing
	3.2 Demonstrate how to implement flower crop maintenance
	3.3 Demonstrate how to get produce ready for distribution

Learning outcomes **The learner will:**	Assessment criteria **The learner can:**
	3.4 Demonstrate how to manage time and labour on a flower growing enterprise
4. Be able to reflect on own professional development needs in flower growing	4.1 Reflect on own professional development needs in flower growing

Additional Requirements for Delivery

The Guided Learning Hours for this unit should take place within a work-based learning environment (either on a farm or garden), under the supervision of an employer or other supervising subject expert. The intrinsic practical subject matter of this unit requires substantial practical experience; therefore a significant proportion of this unit's learning hours are attributed to independent work-based learning.

BDFG-L3-unit23
Biodynamic Herb Growing

Unit code	A/508/1485	**Guided Learning Hours (GLH)**	50
Unit level	3	**Total Qualification Time (TQT)**	200

Unit aim

This unit aims to provide learners with the knowledge, understanding and skills necessary to manage a herb growing enterprise as part of a biodynamic farm organism.

A biodynamic herb grower needs to develop the management, planning and practical skills for managing a herb growing enterprise. This unit aims to support that process by developing learners' wider understanding of plants, their processes and their role in the farm organism, as articulated in the 'Plant Science and Phenomenology' unit.

Content overview

Learning outcome 1: Planning a biodynamic herb growing enterprise
Learners should develop knowledge and understanding related to planning a herb growing enterprise. This should include the following considerations: physical requirements (site, irrigation, tools, equipment, machinery, storage, processing etc.), history of the site, fertility building, crop rotation, plant health, cultivations, weed control, protected growing, timing, labour requirements, potential markets, and use of the biodynamic preparations.
Learners should examine carefully the relationships of the herb growing enterprise with the wider farm organism.

Learning outcome 2: Biodynamic principles of herb growing
Learners may consider how the diversity of the farm organism is supported by herb growing. They should also explore the interdependence of herb to other elements of the farm organism for example fertility exchange. Learners should be introduced to biodynamic principles of fertiliser, soil fertility, soil management, approaches to weeds, pest and disease control.

Learning outcome 3: Managing a biodynamic herb growing enterprise
Learners should acquire all necessary skills required for managing a herb growing enterprise. Learners should be encouraged to accurately reflect on the herb growing enterprise over the course of a year, with specific consideration of their own role and capacities in that management. As part of this reflection learners should be encouraged to suggest improvements to the herb growing enterprise.

Learning outcome 4: Reflection of own professional development needs in herb growing
Learners should consider their areas of skill, knowledge and experience, identifying where additional development is required in relation to herb growing.

Learning outcomes **The learner will:**	Assessment criteria **The learner can:**
1. Be able to plan a biodynamic herb growing enterprise	1.1 Design a herb growing plan
	1.2 Create a seed and plant order, based on the growing plan
2. Understand biodynamic principles of herb growing	2.1 Describe biodynamic approaches to supporting fertility in herb growing
	2.2 Describe biodynamic approaches to soil management for herb growing
	2.3 Describe biodynamic approaches to weeds, pest and disease management for herb growing
	2.4 Explain the relationship between a herb growing enterprise and the farm organism
3. Be able to manage a biodynamic herb growing enterprise	3.1 Demonstrate how to establish a growing plan for herb growing
	3.2 Demonstrate how to implement herb crop maintenance
	3.3 Demonstrate how to get produce ready for distribution
	3.4 Demonstrate how to manage time and labour on a herb growing enterprise
4. Be able to reflect on own professional development needs in herb growing	4.1 Reflect on own professional development needs in herb growing

Additional Requirements for Delivery

The Guided Learning Hours for this unit should take place within a work-based learning environment (either on a farm or garden), under the supervision of an employer or other supervising subject expert. The intrinsic practical subject matter of this unit requires substantial practical experience; therefore a significant proportion of this unit's learning hours are attributed to independent work-based learning.

BDFG-L3-unit24
Biodynamic Seed Growing

Unit code	F/508/1486	**Guided Learning Hours (GLH)**	50
Unit level	3	**Total Qualification Time (TQT)**	200

Unit aim

This unit aims to provide learners with the knowledge, understanding and skills necessary to manage a seed growing enterprise as part of a biodynamic farm organism.

A biodynamic herb seed producer needs to develop the management, planning and practical skills for managing a seed growing enterprise. This unit aims to support that process by developing learners' wider understanding of plants, their processes and their role in the farm organism, as articulated in the Plant Science and Phenomenology unit

This unit may benefit from being delivered in parallel with other relevant units such as 'Biodynamic Farm Fertility', 'Soil Management' and 'Enterprise Management'.

Content overview

Learning outcome 1: The planning of a biodynamic seed growing enterprise
Learners should develop knowledge and understanding related to planning a seed growing enterprise. This should include the following considerations: physical requirements (site, irrigation, tools, equipment, machinery, storage, processing etc.), history of the site, fertility building, crop rotation, plant health, cultivations, weed control, protected growing, timing, labour requirements, potential markets, and use of the biodynamic preparations. Learners should examine carefully the relationships of the seed growing enterprise with the wider farm organism.

Learning outcome 2: Biodynamic principles of seed growing
Learners may consider how the diversity of the farm organism is supported by seed growing. They should also explore the interdependence of seed to other elements of the farm organism for example fertility exchange. Learners should be introduced to biodynamic principles of fertiliser, soil fertility, soil management, approaches to weeds, pest and disease control.

Learning outcome 3: Managing a biodynamic seed growing enterprise
Learners should acquire all necessary skills required for managing a seed growing enterprise. Learners will be encouraged to accurately reflect on the seed growing enterprise over the course of a year, with specific consideration of their own role and capacities in that management. As part of this reflection learners should be encouraged to suggest improvements to the seed growing enterprise.

Learning outcome 4: Reflection of own professional development needs in seed growing

Learners should consider their areas of skill, knowledge and experience, identifying where additional development is required in relation to seed growing.

Learning outcomes **The learner will:**	Assessment criteria **The learner can:**
1. Be able to plan a biodynamic seed growing enterprise	1.1 Design a seed growing plan
	1.2 Create a seed and plant order, based on the growing plan
2. Understand biodynamic principles of seed growing	2.1 Describe biodynamic approaches to supporting fertility in seed growing
	2.2 Describe biodynamic approaches to soil management for seed growing
	2.3 Describe biodynamic approaches to weeds, pest and disease management for seed growing
	2.4 Explain the relationship between a seed growing enterprise and the farm organism
3. Be able to manage a biodynamic seed growing enterprise	3.1 Demonstrate how to establish a growing plan for seed growing
	3.2 Demonstrate how to implement seed crop maintenance
	3.3 Demonstrate how to get produce ready for distribution

Learning outcomes **The learner will:**	Assessment criteria **The learner can:**
	3.4 Demonstrate how to manage time and labour on a seed growing enterprise
4. Be able to reflect on own professional development needs in seed growing	4.1 Reflect on own professional development needs in seed growing

Additional Requirements for Delivery

The Guided Learning Hours for this unit should take place within a work-based learning environment (either on a farm or garden), under the supervision of an employer or other supervising subject expert. The intrinsic practical subject matter of this unit requires substantial practical experience; therefore a significant proportion of this unit's learning hours are attributed to independent work-based learning.

BDFG-L3-unit25
Biodynamic Protected Growing

Unit code	J/508/1487	**Guided Learning Hours (GLH)**	50
Unit level	3	**Total Qualification Time (TQT)**	200

Unit aim

The unit aims to provide learners with the knowledge and skills to use protected growing techniques and equipment for the growing and management of certain crops.

This unit aims to support learners' developing knowledge and skills of using protected growing to support the horticultural activity of an enterprise as part of a biodynamic farm organism.

This unit may benefit from being delivered in conjunction with other relevant horticulture units such as 'Biodynamic Vegetable Growing' 'Biodynamic Fruit Growing', 'Biodynamic Flower Growing', 'Biodynamic Herb Growing' and 'Biodynamic Seed Growing'.

Content overview

Learning outcome 1: Understanding protected growing systems
Learners should develop knowledge and understanding of a range of protective growing systems, e.g. glass houses, poly-tunnels, cold frames, fleeces and nets. This includes advantages and disadvantages of theses systems compared to non protected growing, e.g. cost, labour, energy, resources, crop qualities, …

Learning outcome 2: The planning of a biodynamic protected growing enterprise
Learners should develop knowledge and understanding related to planning a protected growing enterprise. This includes protected systems and challenges of protected growing. Learners should consider the following: physical requirements (site, irrigation, tools, equipment, machinery, storage, processing etc.), history of the site, fertility building, crop rotation, plant health, cultivations, weed control, protected growing, timing, labour requirements, potential markets, and use of the biodynamic preparations. Learners should carefully examine the relationships of the protected growing enterprise with the wider farm organism.

Learning outcome 3: Biodynamic principles of protected growing
Learners may consider how the diversity of the farm organism is supported by protected growing. They should also explore the interdependence of protected growing to other elements of the farm organism for example fertility exchange.
Learners should be introduced to biodynamic principles of fertiliser, soil fertility, soil management, approaches to weeds, pest and disease control.

Learning outcome 4: Managing a biodynamic protected growing enterprise
Learners should acquire all necessary skills required for managing a protected growing enterprise. Learners will be encouraged to accurately reflect on the protected growing

enterprise over the course of a year, with specific consideration of their own role and capacities in that management. As part of this reflection learners should be encouraged to suggest improvements to the protected growing enterprise.

Learning outcome 5: Reflection of own professional development needs in protected growing
Learners should consider their areas of skill, knowledge and experience, identifying where additional development is required in relation to protected growing.

Learning outcomes **The learner will:**	Assessment criteria **The learner can:**
1. Understand protected growing	1.1 Explain different protected growing systems
	1.2 Discuss challenges of protected growing *This must include: Energy, water, waste*
2. Be able to plan a biodynamic protected growing enterprise	2.1 Design a protected growing plan
	2.2 Create a seed and plant order, based on the growing plan
3. Understand biodynamic principles of protected growing	3.1 Describe biodynamic approaches to supporting fertility in protected growing
	3.2 Describe biodynamic approaches to soil management for protected growing
	3.3 Describe biodynamic approaches to weeds, pest and disease management in protected growing
4. Be able to manage a biodynamic protected growing enterprise	4.1 Demonstrate how to establish a growing plan for protected growing

Learning outcomes **The learner will:**	Assessment criteria **The learner can:**
	4.2 Demonstrate how to implement protected growing maintenance
	4.3 Demonstrate how to get produce ready for distribution
	4.4 Demonstrate how to manage time and labour on a protected growing enterprise
5. Be able to reflect on own professional development needs in protected growing	5.1 Reflect on own professional development needs in protected growing

Additional Requirements for Delivery

The Guided Learning Hours for this unit should take place within a work-based learning environment (either on a farm or garden), under the supervision of an employer or other supervising subject expert. The intrinsic practical subject matter of this unit requires substantial practical experience; therefore a significant proportion of this unit's learning hours are attributed to independent work-based learning.

BDFG-L3-unit26
Biodynamic Grassland and Fodder

Unit code	L/508/1488	**Guided Learning Hours (GLH)**	50
Unit level	3	**Total Qualification Time (TQT)**	200

Unit aim

The unit aims to provide learners with the practical knowledge and abilities to manage grassland and produce fodder on a biodynamic farm.

Biodynamic farms aim to be as self-sustaining as possible. It is therefore important for those with animals to aim to produce most or all of their animal feed. In consideration of this aim, learners are given the opportunity to understand the difference between permanent and temporary pasture and how its composition (e.g. legumes, grasses and other plants) can influence the productivity and health of the animals feeding on it. Learners should also be given the opportunity to develop practical skills in managing grassland throughout the year. This should include developing skills in making hay, haylage and silage.

This unit may benefit from being delivered in parallel with the 'Biodynamic Farm Fertility', 'Soil Management' and 'Enterprise Management' units.

Content overview

Learning outcome 1: The planning of a biodynamic grassland and fodder growing enterprise

Learners should develop knowledge and understanding related to planning a grassland and fodder growing enterprise. This should include the following considerations: physical requirements (site, irrigation, drainage, tools, equipment, machinery, storage, processing etc.), history of the site, fertility building, drainage, crop rotation, plant health, cultivations, weed control, timing, labour requirements, potential markets, and use of the biodynamic preparations. Learners should carefully examine the relationships of the grassland and fodder growing enterprise with the wider farm organism.

Learning outcome 2: Biodynamic principles of grassland and fodder growing

Learners may consider how the diversity of the farm organism is supported by grassland and fodder growing. They should also explore the interdependence of grassland and fodder to other elements of the farm organism for example fertility exchange. Learners should be introduced to biodynamic principles of fertiliser, soil fertility, soil management, approaches to weeds, pest and disease control.

Learning outcome 3: Managing a biodynamic grassland and fodder growing enterprise

Learners should acquire all necessary skills required for managing a grassland and fodder growing enterprise. Learners will be encouraged to accurately reflect on the grassland and

fodder growing enterprise over the course of a year, with specific consideration of their own role and capacities in that management.
As part of this reflection learners should be encouraged to suggest improvements to the grassland and fodder growing enterprise.

Learning outcome 4: Reflection of own professional development needs in grassland and fodder growing
Learners should consider their areas of skill, knowledge and experience, identifying where additional development is required in relation to grassland and fodder growing.

Learning outcomes	Assessment criteria
The learner will:	**The learner can:**
1. Be able to plan a grassland and fodder enterprise	1.1 Design a grassland and fodder management plan *This must include: Grazing and fodder harvesting*
	1.2 Identify a suitable plant mix for a particular enterprise *This must be based on soil quality, existing plant mix and animal needs*
2. Understand biodynamic principles of grassland and fodder growing	2.1 Describe biodynamic approaches to supporting fertility in grassland and fodder
	2.2 Describe biodynamic approaches to soil management for grassland and fodder
	2.3 Explain a biodynamic approach to harvesting fodder for storage
	2.4 Explain the relationship between a grassland and fodder enterprise and the farm organism

Learning outcomes **The learner will:**	Assessment criteria **The learner can:**
3. Be able to manage a biodynamic grassland and fodder growing enterprise	3.1 Demonstrate how to establish a growing plan for grassland and fodder
	3.2 Demonstrate how to implement grassland and fodder maintenance
	3.3 Demonstrate how to harvest fodder for storage
	3.4 Demonstrate how to manage time and labour on a grassland and fodder enterprise
4. Be able to reflect on own professional development needs in grassland and fodder management	4.1 Reflect on own professional development needs in grassland and fodder management

Additional Requirements for Delivery

The Guided Learning Hours for this unit should take place within a work-based learning environment (either on a farm or garden), under the supervision of an employer or other supervising subject expert. The intrinsic practical subject matter of this unit requires substantial practical experience; therefore a significant proportion of this unit's learning hours are attributed to independent work-based learning.

BDFG-L3-unit27
Biodynamic Arable Growing

Unit code	R/508/1489	**Guided Learning Hours (GLH)**	50
Unit level	3	**Total Qualification Time (TQT)**	200

Unit aim

This unit aims to provide learners with the knowledge, understanding and skills necessary to manage the growing of arable and field crops as part of a biodynamic farm organism.

From the wider understanding of plants, their processes and their role in the farm organism, a biodynamic grower can develop the management, planning and practical skills to manage an arable and field crop growing enterprise.

This unit may benefit from being delivered in conjunction with the 'Biodynamic Farm Fertility' and 'Soil Management' units.

Content overview

Learning outcome 1: The planning of a biodynamic arable enterprise
Learners should develop their knowledge and understanding related to planning an arable enterprise. This should include the following considerations: physical requirements (site, irrigation, drainage, tools, equipment, machinery, storage, processing etc.), history of the site, fertility building, drainage, crop rotation, plant health, cultivations, weed control, timing, labour requirements, potential markets, and use of the biodynamic preparations. Learners should examine carefully the relationships of the arable enterprise with the wider farm organism.

Learning outcome 2: Biodynamic principles of arable growing
Learners may consider how the diversity of the farm organism is supported by arable growing. They should also explore the interdependence of arable growing to other elements of the farm organism for example fertility exchange.
Learners should be introduced to biodynamic principles of fertiliser, soil fertility, soil management, approaches to weeds, pest and disease control.

Learning outcome 3: Managing a biodynamic arable enterprise
Learners should acquire all necessary skills required for managing an arable enterprise. Learners will be encouraged to accurately reflect on the arable enterprise over the course of a year, with specific consideration of their own role and capacities in that management. As part of this reflection learners should be encouraged to suggest improvements to the arable enterprise.

Learning outcome 4: Reflection of own professional development needs in arable growing

Learners should consider their areas of skill, knowledge and experience, identifying where additional development is required in relation to arable growing.

Learning outcomes **The learner will:**	Assessment criteria **The learner can:**
1. Be able to plan a biodynamic arable growing enterprise	1.1 Design a biodynamic arable growing plan
	1.2 Create a seed and plant order, based on the growing plan
2. Understand biodynamic principles of arable growing	2.1 Describe biodynamic approaches to supporting fertility in arable growing
	2.2 Describe biodynamic approaches to soil management for arable growing
	2.3 Describe biodynamic approaches to weeds, pest and disease management for arable growing
	2.4 Explain the relationship between a arable growing enterprise and the farm organism
3. Be able to manage a biodynamic arable growing enterprise	3.1 Demonstrate how to establish a plan for arable growing
	3.2 Demonstrate how to implement arable crop maintenance
	3.3 Demonstrate how to harvest and store arable crops
	3.4 Demonstrate how to manage time and labour on an arable growing enterprise

Learning outcomes **The learner will:**	Assessment criteria **The learner can:**
4. Be able to reflect on own professional development needs in arable growing	4.1 Reflect on own professional development needs in arable growing

Additional Requirements for Delivery

The Guided Learning Hours for this unit should take place within a work-based learning environment (either on a farm or garden), under the supervision of an employer or other supervising subject expert. The intrinsic practical subject matter of this unit requires substantial practical experience; therefore a significant proportion of this unit's learning hours are attributed to independent work-based learning.

BDFG-L3-unit28
Biodynamic Cattle Husbandry

Unit code	J/508/1490	**Guided Learning Hours (GLH)**	50
Unit level	3	**Total Qualification Time (TQT)**	200

Unit aim

This unit aims to provide learners with the philosophical, theoretical and practical knowledge to manage a herd of cattle over the course of the year.

Understanding the significant contribution of cows to the farm organism is fundamental to a biodynamic farmer's approach to managing a herd of cattle. From this holistic understanding develops the planning process of management, health and care for cattle. The learner will be given the opportunity to apply this understanding and associated practical skills in caring for cattle within this unit.

Delivery of this unit would benefit from learners' broader understanding of animals that is included in the 'Animal Science and Phenomenology' unit. Other units which also relate to this unit are 'Biodynamic Farm Fertility', 'Soil Management' and 'Enterprise Management'.

Content overview

Learning outcome 1: The role of the cow in the farm organism
Learners should be encouraged to draw on their explorations in the Animal Science and Phenomenology unit to look specifically at the 'being' of the cow (Steiner, R 1997) and how this is reflected in a cow's physiology (specifically in the digestive organs), manure and relationship with its environment. From this wider view, learners should consider the many ways in which the cow is related to the farm organism.
Discussions may also include aspects of the history of cows and their domestication to create a wider understanding of the subject.

Learning outcome 2: Biodynamic approaches to cattle husbandry
Out of the understanding of cows, learners should be introduced to the practicalities of caring and managing a herd of cattle. This may include: housing /outside enclosures (especially seasonal variation), stocking rates, manure management, nutrition and a feeding plan, reproductive cycle and breeding plan, diseases and health plan, all of which should be integrated in an annual management plan for the herd. All the external requirements for the keeping of biodynamic beef cattle should be included: Demeter standards, legislation and codes of practice, required record keeping (births, deaths, weights, movements, use of medicines).

Learning outcome 3: Managing a biodynamic cattle enterprise
Learners will be given the opportunity to develop independence and proficiency in the skills necessary to be responsible for a herd of beef cattle on a day-to-day basis

throughout the year, implementing the management plan. This should include the following skills (when applicable): handling, feeding, identifying and treating diseases, ear tagging, foot care, castrating, using a cattle race, weighing, body condition scoring, vaccinations (when applicable), homeopathic remedies, recognising signs of heat and immanent birth, assist with birth, maintaining housing and fencing/ outside enclosures.
In all areas learners should develop the knowledge of what professional assistance is available and when it is appropriate to request external support.

Learning outcomes **The learner will:**	Assessment criteria **The learner can:**
1. Understand the role of the cow in the biodynamic farm organism	1.1 Explain the role of the cow in the biodynamic farm organism
	1.2 Discuss factors that influence the number of cattle on a holding
	1.3 Outline Demeter standards relating to cattle
2. Understand biodynamic approaches to cattle husbandry on a holding	2.1 Outline a annual feeding plan for biodynamic cattle on a holding
	2.2 Outline a breeding plan for biodynamic cattle on a holding
	2.3 Outline enclosure requirements for keeping biodynamic cattle on a holding *This must include: housing and outdoor areas*
	2.4 Discuss the health challenges of cattle on a holding

Learning outcomes **The learner will:**	Assessment criteria **The learner can:**
	2.5 Describe regulatory requirements for keeping cattle *This must include: registration and record keeping.*
3. Be able to manage a biodynamic cattle enterprise	3.1 Demonstrate how to feed biodynamic cattle according to a feeding plan
	3.2 Demonstrate how to manage a breeding cycle of biodynamic cattle
	3.3 Maintain cattle enclosures *This must include: housing and outdoor areas*
	3.4 Carry out a health care assessment of cattle
	3.5 Carry out regulatory requirements for cattle *This must include: ear tagging, record keeping*

Additional Requirements for Delivery

The Guided Learning Hours for this unit should take place within a work-based learning environment (either on a farm or garden), under the supervision of an employer or other supervising subject expert. The intrinsic practical subject matter of this unit requires substantial practical experience; therefore a significant proportion of this unit's learning hours are attributed to independent work-based learning.

BDFG-L3-unit29
Biodynamic Sheep Husbandry

Unit code	L/508/1491	**Guided Learning Hours (GLH)**	50
Unit level	3	**Total Qualification Time (TQT)**	200

Unit aim

This unit aims to provide learners with the philosophical, theoretical and practical knowledge to manage a herd of sheep over the course of the year.

Understanding the contribution of sheep to the farm organism is fundamental to a biodynamic farmer's approach to managing a flock of sheep. From this holistic understanding develops the planning of management, health and care for sheep. Learners will be given the opportunity to apply managerial and practical skills in caring for sheep.

This unit requires the broader understanding of animals that is presented in the 'Animal Science and Phenomenology' unit and should therefore be delivered after or together with this unit.

This unit may also benefit from being delivered in parallel with other relevant units including 'Biodynamic Farm Fertility', 'Soil Management' and 'Enterprise Management'.

Content overview

Learning outcome 1: The role of the sheep in the farm organism
Learners should be encouraged to draw on their explorations in the Animal Science and Phenomenology unit to look specifically at the 'being' of the sheep (Steiner, R, 1997) , how this is reflected in a sheep's physiology (specifically in the digestive organs), manure and relationship with its environment. From this wider view, learners should consider the many ways in which the sheep is related to the farm organism.
Discussions may also include aspects of the history of sheep and their domestication to create a wider understanding of the subject.

Learning outcome 2: Biodynamic approaches to sheep husbandry
Out of the understanding of sheep, learners should be introduced to the practicalities of caring and managing a flock of sheep. This may include: housing /outside enclosures (especially seasonal variation), stocking rates, manure management, nutrition and a feeding plan, re-productive cycle and breeding plan, diseases and health plan, all of which should be integrated in an annual management plan for the herd.
All the external requirements for the keeping of biodynamic sheep should be included: De-meter standards, legislation and codes of practice, required record keeping (births, deaths, weights, movements and use of medicines).

Learning outcome 3: Managing a biodynamic sheep enterprise

Learners will be given the opportunity to develop independence and proficiency in the skills necessary to be responsible for a flock of sheep on a day-to-day basis throughout the year, implementing the management plan.
This should include the following skills (when applicable): handling, feeding, identifying and treating diseases, ear tagging, foot care, castrating, using a sheep race, weighing, body condition scoring, vaccinations, homeopathic remedies, recognising signs of heat and immanent birth, assist with birth, maintaining housing and fencing/ outside enclosures.
In all areas learners should develop the knowledge of what professional assistance is available and when it is appropriate to request external support.

Learning outcomes **The learner will:**	Assessment criteria **The learner can:**
1. Understand the role of the sheep in the biodynamic farm organism	1.1 Explain the role of the sheep in the biodynamic farm organism
	1.2 Discuss factors that influence the number of sheep on a holding
	1.3 Outline Demeter standards relating to sheep
2. Understand biodynamic approaches to sheep husbandry on a holding	2.1 Outline a annual feeding plan for biodynamic sheep on a holding
	2.2 Outline a breeding plan for biodynamic sheep on a holding
	2.3 Outline enclosure requirements for keeping biodynamic sheep on a holding *This must include: housing and outdoor areas*
	2.4 Discuss the health challenges of sheep on a holding

Learning outcomes **The learner will:**	Assessment criteria **The learner can:**
	2.5 Describe regulatory requirements for keeping sheep *This must include: registration and record keeping.*
3. Be able to manage a biodynamic sheep enterprise	3.1 Demonstrate how to feed biodynamic sheep according to a feeding plan
	3.2 Demonstrate how to manage a breeding cycle of biodynamic sheep
	3.3 Maintain sheep enclosures *This must include: housing and outdoor areas*
	3.4 Carry out a health care assessment of sheep
	3.5 Carry out regulatory requirements for sheep *This must include: ear tagging, record keeping*

Additional Requirements for Delivery

The Guided Learning Hours for this unit should take place within a work-based learning environment (either on a farm or garden), under the supervision of an employer or other supervising subject expert. The intrinsic practical subject matter of this unit requires substantial practical experience; therefore a significant proportion of this unit's learning hours are attributed to independent work-based learning.

BDFG-L3-unit30
Biodynamic Goat Husbandry

Unit code	R/508/1492	**Guided Learning Hours (GLH)**	50
Unit level	3	**Total Qualification Time (TQT)**	200

Unit aim

This unit aims to provide learners with the philosophical, theoretical and practical knowledge to manage a herd of goats over the course of the year.

Understanding the contribution of goats to the farm organism is fundamental to a biodynamic farmer's approach to managing a herd of goats. From this holistic understanding develops the planning of management, health and care for goats. Learners will be given the opportunity to apply both managerial and practical skills in caring for goats.

This unit requires the broader understanding of animals that is presented in the 'Animal Science and Phenomenology' unit and should therefore be delivered after or together with this unit.

This unit would benefit from being delivered in parallel with other relevant units including 'Biodynamic Farm Fertility', 'Soil Management' and 'Enterprise Management'.

Content overview

Learning outcome 1: The role of the goat in the farm organism
Learners should be encouraged to draw on their explorations in the Animal Science and Phenomenology unit to look specifically at the 'being' of the goat (Steiner, R 1997), how this is reflected in a goat's physiology (specifically in the digestive organs), manure and relationship with its environment. From this wider view, learners should consider the many ways in which the goat is related to the farm organism.
Discussions may also include aspects of the history of goats and their domestication to create a wider understanding of the subject.

Learning outcome 2: Biodynamic approaches to goat husbandry
Out of the understanding of goats, learners should be introduced to the practicalities of caring and managing a herd of goats. This may include: housing /outside enclosures (especially seasonal variation), stocking rates, manure management, nutrition and a feeding plan, reproductive cycle and breeding plan, diseases and health plan, all of which should be integrated in an annual management plan for the herd.
All the external requirements for the keeping of biodynamic goats should be included: Demeter standards, legislation and codes of practice, required record keeping (births, deaths, weights, movements, use of medicines).

Learning outcome 3: Managing a biodynamic goat enterprise
Learners will be given the opportunity to develop independence and proficiency in the skills necessary to be responsible for a herd of goats on a day-to-day basis throughout the year, implementing the management plan. This should include the following skills (when applicable): handling, feeding, identifying and treating diseases, ear tagging, foot care, castrating, using a goat race, weighing, body condition scoring, vaccinations, homeopathic remedies, recognising signs of heat and immanent birth, assist with birth, maintaining housing and fencing /outside enclosures.
In all areas learners should develop the knowledge of what professional assistance is available and when it is appropriate to request external support.

Learning outcomes **The learner will:**	Assessment criteria **The learner can:**
1. Understand the role of goats in the biodynamic farm organism	1.1 Explain the role of the goat in the biodynamic farm organism
	1.2 Discuss factors that influence the number of goats on a holding
	1.3 Outline Demeter standards relating to goats
2. Understand biodynamic approaches to goat husbandry on a holding	2.1 Outline a annual feeding plan for biodynamic goats on a holding
	2.2 Outline a breeding plan for biodynamic goats on a holding
	2.3 Outline enclosure requirements for keeping biodynamic goats on a holding *This must include: housing and outdoor areas*
	2.4 Discuss the health challenges of goats on a holding

Learning outcomes **The learner will:**	Assessment criteria **The learner can:**
	2.5 Describe regulatory requirements for keeping goats *This must include: registration and record keeping.*
3. Be able to manage a biodynamic goat enterprise	3.1 Demonstrate how to feed biodynamic goats according to a feeding plan
	3.2 Demonstrate how to manage a breeding cycle of biodynamic goats
	3.3 Maintain goat enclosures *This must include: housing and outdoor areas*
	3.4 Carry out a health care assessment of goats
	3.5 Carry out regulatory requirements for goats *This must include: ear tagging, record keeping*

Additional Requirements for Delivery

The Guided Learning Hours for this unit should take place within a work-based learning environment (either on a farm or garden), under the supervision of an employer or other supervising subject expert. The intrinsic practical subject matter of this unit requires substantial practical experience; therefore a significant proportion of this unit's learning hours are attributed to independent work-based learning.

BDFG-L3-unit31
Biodynamic Pig Husbandry

Unit code	Y/508/1493	**Guided Learning Hours (GLH)**	50
Unit level	3	**Total Qualification Time (TQT)**	200

Unit aim

This unit aims to provide learners with the philosophical, theoretical and practical knowledge to manage a herd of pigs over the course of the year.

Understanding the contribution of pigs to the farm organism is fundamental to a biodynamic farmer's approach to managing a herd of pigs. From this holistic understanding develops the planning of management, health and care for pigs. Learners will be given the opportunity to apply practical skills in caring for pigs.

This unit requires the broader understanding of animals that is presented in the 'Animal Science and Phenomenology' unit and should therefore be delivered after or together with this unit.

This unit may also benefit from being delivered in parallel with other relevant units including 'Biodynamic Farm Fertility', 'Soil Management' and 'Enterprise Management'.

Content overview

Learning outcome 1: The role of the pig in the farm organism
Learners should be encouraged to draw on their explorations in the Animal Science and Phenomenology unit to look specifically at the 'being' of the pig (Steiner, R 1997), how this is reflected in a pig's physiology (specifically in the digestive organs), manure and relationship with its environment. From this wider view, learners should consider the many ways in which the pig is related to the farm organism. Discussions may also include aspects of the history of pigs and their domestication to create a wider understanding of the subject.

Learning outcome 2: Biodynamic approaches to pig husbandry
Out of the understanding of pigs, learners should be introduced to the practicalities of caring and managing a herd of pigs. This may include: housing /outside enclosures (especially seasonal variation), stocking rates, manure management, nutrition and a feeding plan, re-productive cycle and breeding plan, diseases and health plan, all of which should be integrated in an annual management plan for the herd.
All the external requirements for the keeping of biodynamic pigs should be included: Demeter standards, legislation and codes of practice, required record keeping (births, deaths, weights, movements, use of medicines).

Learning outcome 3: Manage a biodynamic pig enterprise

Learners will be given the opportunity to develop independence and proficiency in the skills necessary to be responsible for a herd of pigs on a day-to-day basis throughout the year, implementing the management plan. This should include the following skills (when applicable): handling, feeding, identifying and treating diseases, ear tagging, foot care, castrating, using a cattle race, weighing, body condition scoring, vaccinations, homeopathic remedies, recognising signs of heat and immanent birth, assist with birth, maintaining housing and fencing/ outside enclosures.
In all areas learners should develop the knowledge of what professional assistance is available and when it is appropriate to request external support.

Learning outcomes **The learner will:**	Assessment criteria **The learner can:**
1. Understand the role of pigs in the biodynamic farm organism	1.1 Explain the role of pigs in the biodynamic farm organism
	1.2 Discuss factors that influence the number of pigs on a holding
	1.3 Outline Demeter standards relating to pigs
2. Understand biodynamic approaches to pig husbandry on a holding	2.1 Outline a annual feeding plan for biodynamic pigs on a holding
	2.2 Outline a breeding plan for biodynamic pigs on a holding
	2.3 Outline enclosure requirements for keeping biodynamic pigs on a holding *This must include: housing and outdoor areas*
	2.4 Discuss the health challenges of pigs on a holding

Learning outcomes **The learner will:**	Assessment criteria **The learner can:**
	2.5 Describe regulatory requirements for keeping pigs *This must include: registration and record keeping.*
3. Be able to manage a biodynamic pig enterprise	3.1 Demonstrate how to feed biodynamic pigs according to a feeding plan
	3.2 Demonstrate how to manage a breeding cycle of biodynamic pigs
	3.3 Maintain pig enclosures *This must include: housing and outdoor areas*
	3.4 Carry out a health care assessment of pigs
	3.5 Carry out regulatory requirements for pigs *This must include: ear tagging, record keeping*

Additional Requirements for Delivery

The Guided Learning Hours for this unit should take place within a work-based learning environment (either on a farm or garden), under the supervision of an employer or other supervising subject expert. The intrinsic practical subject matter of this unit requires substantial practical experience; therefore a significant proportion of this unit's learning hours are attributed to independent work-based learning.

BDFG-L3-unit32
Biodynamic Poultry Husbandry

Unit code	D/508/1494	**Guided Learning Hours (GLH)**	50
Unit level	3	**Total Qualification Time (TQT)**	200

Unit aim

This unit aims to provide learners with the philosophical, theoretical and practical knowledge to manage a flock of poultry over the course of the year.

Understanding the contribution of poultry to the farm organism is fundamental to a biodynamic farmer's approach to managing a flock of poultry. From this holistic understanding develops the planning aspect of management, health and care for poultry. Learners will be given the opportunity to apply practical skills in caring for poultry.

This unit requires the broader understanding of animals that is presented in the 'Animal Science and Phenomenology' unit and should therefore be delivered after or together with this unit.

This unit may benefit from being delivered in parallel with other relevant units including 'Biodynamic Farm Fertility', 'Soil Management' and 'Enterprise Management'.

Content overview

Learning outcome 1: The role of the poultry in the farm organism
Learners should be encouraged to draw on their explorations in the Animal Science and Phenomenology unit to look specifically at the 'being' of poultry (Steiner, R, 1997), how this is reflected in poultry's physiology (specifically in the digestive organs), manure and relationship with its environment. From this wider view, learners should consider the many ways in which the poultry is related to the farm organism.
Discussions may also include aspects of the history of poultry and their domestication to create a wider understanding of the subject.

Learning outcome 2: Biodynamic approaches to poultry husbandry
Out of the understanding of poultry, learners should be introduced to the practicalities of caring and managing a flock of poultry. This may include: housing/ outside enclosures (especially seasonal variation), stocking rates, manure management, nutrition and a feeding plan (specifically addressing protein intake), reproductive cycle and breeding plan, diseases and health plan, all of which should be integrated in an annual management plan for the flock. All the external requirements for the keeping of biodynamic poultry should be included: Demeter standards, legislation and codes of practice, required record keeping (births, deaths, weights, movements, use of medicines).

Learning outcome 3: Managing a biodynamic poultry enterprise

Learners will be given the opportunity to develop independence and proficiency in the skills necessary to be responsible for a flock of poultry on a day-to-day basis throughout the year, implementing the management plan.
This should include the following skills (when applicable): handling, feeding, identifying and treating diseases, ring marking, foot and feather care, using a poultry race, weighing, vaccinations, homeopathic remedies, maintaining housing and fencing/ outside enclosures, handling eggs, selecting for slaughter and slaughter.
In all areas learners should develop the knowledge of what professional assistance is available and when it is appropriate to request external support.

Learning outcomes **The learner will:**	Assessment criteria **The learner can:**
1. Understand the role of poultry in the biodynamic farm organism	1.1 Explain the role of poultry in the biodynamic farm organism
	1.2 Discuss factors that influence the number of poultry on a holding
	1.3 Outline Demeter standards relating to poultry
2. Understand biodynamic approaches to poultry husbandry on a holding	2.1 Outline a annual feeding plan for biodynamic poultry on a holding
	2.2 Outline enclosure requirements for keeping biodynamic poultry on a holding *This must include: housing and outdoor areas*
	2.3 Discuss the health challenges of poultry on a holding
	2.4 Describe regulatory requirements for keeping poultry *This must include: registration and record keeping.*

Learning outcomes **The learner will:**	Assessment criteria **The learner can:**
3. Be able to manage a biodynamic poultry enterprise	3.1 Demonstrate how to feed biodynamic poultry according to a feeding plan
	3.2 Demonstrate how to manage a breeding cycle of biodynamic poultry
	3.3 Maintain poultry enclosures *This must include: housing and outdoor areas*
	3.4 Carry out a health care assessment of poultry
	3.5 Carry out regulatory requirements for poultry *This must include record keeping*

Additional Requirements for Delivery

The Guided Learning Hours for this unit should take place within a work-based learning environment (either on a farm or garden), under the supervision of an employer or other supervising subject expert. The intrinsic practical subject matter of this unit requires substantial practical experience; therefore a significant proportion of this unit's learning hours are attributed to independent work-based learning.

BDFG-L3-unit33
Biodynamic Dairy Husbandry

Unit code	H/508/1495	**Guided Learning Hours (GLH)**	50
Unit level	3	**Total Qualification Time (TQT)**	200

Unit aim

This unit aims to provide learners with the philosophical, theoretical and practical knowledge to manage a dairy herd over the course of the year. In this context, a dairy herd might be cattle, goats or sheep.

Dairy animals provide one of the strongest and most regular rhythms on a farm. From a wider understanding of animals and the specific activity of producing milk, a farmer can develop a management plan for the feeding, housing and care of a dairy herd. Learners will be given the opportunity to apply these practical skills in caring for a dairy herd.

This unit requires the wider understanding of animals that is presented in the Animal Science and Phenomenology unit and should therefore be delivered after or together with this unit. This unit must also be completed in parallel with one of the other units on biodynamic ruminant management (Biodynamic Cattle Husbandry, Biodynamic Sheep Husbandry or Biodynamic Goat Husbandry).

This unit may benefit from being delivered in parallel with several other units including 'Biodynamic Farm Fertility', 'Soil Management' and 'Enterprise Management'.

Content overview

Learning outcome 1: The role of the dairy animal in the farm organism
Learners should be encouraged to draw on their explorations in the Animal Science and Phenomenology unit to look specifically at the 'being' of the dairy animal and how this is reflected in a dairy animal's physiology (specifically in the digestive organs), manure and relationship with its environment. From this wider view, learners should consider the many ways in which the dairy animal is related to the farm organism.

Discussions may also include aspects of the history of the dairy animal and their domestication to create a wider understanding of the subject.

Learning outcome 2: Biodynamic approaches to dairy animal husbandry
Out of the understanding of dairy animals, learners should be introduced to the practicalities of caring and managing a herd of dairy animal. This may include: housing /outside enclosures (especially seasonal variation), stocking rates, manure management, nutrition and a feeding plan, reproductive cycle and breeding plan, diseases and health plan and milking, all of which should be integrated in an annual management plan for the herd.

All the external requirements for the keeping of biodynamic dairy animals should be included: Demeter standards, legislation and codes of practice, required record keeping (births, deaths, weights, movements, use of medicines).

Learning outcome 3: Milk production of dairy animals
Learners should be introduced to a range of milking methods and related techniques, physiological aspects related to milk production, health and safety and hygiene regulations specific to dairy (including milk sampling), symptoms, conditions and treatments of diseases that are most likely in dairy animals (mastitis and milk fever) and milk quality.

Learning outcome 4: Managing a biodynamic dairy animal enterprise
Learners will be given the opportunity to develop independence and proficiency in the skills necessary to be responsible for a herd of dairy animal on a day-to-day basis throughout the year, implementing the management plan. This should include the following skills (when applicable): handling, milking, feeding, identifying and treating diseases, ear tagging, foot care, castrating, using a dairy animal race, weighing, body condition scoring, vaccinations, homeopathic remedies, recognising signs of heat and immanent birth, assist with birth, maintaining housing and fencing/ outside enclosures.
In all areas learners should develop the knowledge of what professional assistance is available and when it is appropriate to request external support.

Learning outcomes	Assessment criteria
The learner will:	**The learner can:**
1. Understand the role of dairy animals in the biodynamic farm organism	1.1 Explain the role of dairy animals in the biodynamic farm organism
	1.2 Discuss factors that influence the number of dairy animals on a holding
	1.3 Outline Demeter standards relating to dairy animals
2. Understand biodynamic approaches to dairy husbandry on a holding	2.1 Outline a annual feeding plan for biodynamic dairy animals on a holding
	2.2 Outline a breeding plan for biodynamic dairy animals on a holding

Learning outcomes **The learner will:**	Assessment criteria **The learner can:**
	2.3 Outline enclosure requirements for keeping biodynamic dairy animals on a holding *This must include: housing and outdoor areas*
	2.4 Discuss the health challenges of dairy animals on a holding
	2.5 Describe regulatory requirements for keeping dairy animals *This must include: registration and record keeping.*
3. Understand milk production of dairy animals	3.1 Explain milk production of dairy animals *This may be any dairy animal and must include: udder physiology, milk quality, milking techniques, milk handling and hygiene.*
4. Be able to manage a biodynamic dairy enterprise	4.1 Demonstrate how to feed biodynamic dairy animals according to a feeding plan
	4.2 Demonstrate how to manage a breeding cycle of biodynamic dairy animals
	4.3 Maintain dairy enclosures *This must include: housing and outdoor areas*
	4.4 Carry out a health care assessment of dairy animals

Learning outcomes **The learner will:**	Assessment criteria **The learner can:**
	4.5 Carry out regulatory requirements for dairy animals *This must include: ear tagging and record keeping*

Additional Requirements for Delivery

The Guided Learning Hours for this unit should take place within a work-based learning environment (either on a farm or garden), under the supervision of an employer or other supervising subject expert. The subject matter of this unit requires substantial practical experience; therefore a significant proportion of the learning hours are attributed to independent work-based learning.

BDFG-L3-unit34
Biodynamic Bee Husbandry

Unit code	K/508/1496	**Guided Learning Hours (GLH)**	10
Unit level	3	**Total Qualification Time (TQT)**	30

Unit aim

This unit aims to provide learners with an understanding of bees and the skills required for working with bees in the context of a biodynamic farm organism.

Bees have a unique role in the farm organism and make a valuable contribution to the overall well-being of a biodynamic farm. An understanding of this wider context is vital to enable learners to work with bees out of biodynamic principles and provide a context for practical experience and skills.

Content overview

Learning outcome 1: The role of bees in the farm organism
Learners should be encouraged to consider the 'being' of the bee in the context of the organization of the hive and the bees' relationship with their environment. Learners should explore the many ways in which bees play a vital role in the farm organism and beyond. This should include a discussion of the current issues around bees including the livelihood threat of pesticides, loss of food sources, pest and diseases, and colony collapse disorder.

Learning outcome 2: Biodynamic approaches to caring for bees
Learners should be introduced to the practicalities of working with bees, including: identification of different bees (queen, worker and drone) and their functions in the hive; annual rhythm of bee activity including the hive and forage; safety issues; what to do with a swarm; how to support health in bees, diseases (varroa mite for example); housing (awareness of different types of hives and location), feeding (sugar, forage availability); breeding and good practice in keeping bees.
Learners should be aware of international Demeter standards regarding bees, as a guide to good biodynamic practice. All of this should be integrated into an annual management plan for the beehive.

Learning outcome 3: Caring for bees using biodynamic principles
Learners should be given the opportunity to develop independence and proficiency in the skills necessary to be responsible for a hive of bees on a day-to-day basis over the course of a year, implementing the management plan. This should include: awareness of health and safety, personal protective equipment, handling, feeding (when necessary), identifying and treating diseases, hive care, swarming (when possible), identifying queens, Demeter standards and good practice.
In all areas learners should develop the knowledge of what professional assistance is available and when it is appropriate to request external support.

Learning outcomes **The learner will:**	Assessment criteria **The learner can:**
1. Understand the role of bees in the biodynamic farm organism	1.1 Explain how bees contribute to the biodynamic farm organism
2. Understand biodynamic approaches to caring for bees	2.1 Describe the different roles of bees in the hive
	2.2 Explain the biodynamic approach to the annual management of the beehive *This must include: Good health and safety practice; seasonal care; biodynamic approaches to fodder provision; biodynamic approaches to pest and disease control; harvesting honey.*
3. Be able to care for bees using biodynamic principles	3.1 Demonstrate how to care for bees using biodynamic principles *This may include: Good health and safety practice; seasonal care; biodynamic approaches to fodder provision; biodynamic approaches to pest and disease control; harvesting honey.*

Additional Requirements for Delivery

The Guided Learning Hours for this unit should take place within a work-based learning environment (either on a farm or garden), under the supervision of an employer or other supervising subject expert. The subject matter of this unit requires substantial practical experience; therefore a significant proportion of the learning hours are attributed to independent work-based learning.

BDFG-L3-unit35
Working with Draught Animals

Unit code	M/508/1497	**Guided Learning Hours (GLH)**	10
Unit level	3	**Total Qualification Time (TQT)**	30

Unit aim

The unit aims to provide learners with an understanding of draught animals, how they can best be cared for, used for work and what affect this has on the farm organism as a whole.

Draught animals provide an alternative to mechanised traction which can be beneficial for some farms. As such it may therefore be beneficial to some farmers to use more traditional farming methods. Having the possibility of caring for and working with draught animals gives learners a wider range of skills relevant for a farm.

This unit must be completed alongside either the 'Biodynamic Cattle Husbandry' or 'Biodynamic Draught Horse Husbandry' unit. These units complement this unit by developing learners' more general management and care knowledge and skills associated with these animals. This unit seeks to focus on the specific aspects of working with draught animals.

Content overview

Learning outcome 1: Draught animals' contribution to the biodynamic farm organism
Learners should explore the qualitative differences between using draught animals and mechanised traction, with specific attention to their contribution to the farm organism.

Learning outcome 2: Principles of working with draught animals on a biodynamic farm
Learners should be introduced to the specific requirements of draught animals. This should include consideration of the following: breed, feeding, hoof care, housing, work/life balance, rhythms, training, working and Health and Safety (particular with use of machinery).

Learning outcome 3: Working with draught animals
Learners should be given the opportunity to practice skills in working with draught animals, using a variety of implements, assessing appropriate work and choosing suitable conditions in which to perform the work. Learners should have developed their skills sufficiently to perform all of the above independently without supervision or assistance.

Learning outcomes **The learner will:**	Assessment criteria **The learner can:**
1. Understand how draught animals can contribute to the biodynamic farm organism	1.1 Explain how draught animals can contribute to the biodynamic farm organism *This must include: impacts to soil quality; therapeutic potential for those working with the animals; implications for sustainability.*
2. Understand principles of working with draught animals on a biodynamic farm	2.1 Explain principles of working with draught animals on a biodynamic farm *This must include: appropriate feeding; handling skills; health and safety considerations; awareness of rhythms and working conditions of draught animals.*
3. Be able to work with draught animals	3.1 Demonstrate how to work with draught animals *This must include: preparing for work; using cultivation tools; driving skills.*

Additional Requirements for Delivery

The Guided Learning Hours for this unit should take place within a work-based learning environment (either on a farm or garden), under the supervision of an employer or other supervising subject expert. The subject matter of this unit requires substantial practical experience; therefore a significant proportion of the learning hours are attributed to independent work-based learning.

BDFG-L3-unit36
Land based Social Pedagogy

Unit code	T/508/1498	**Guided Learning Hours (GLH)**	10
Unit level	3	**Total Qualification Time (TQT)**	30

Unit aim

The farm as an organism can provide the environment to support the development and transformation of those working on it. This unit therefore explores the potential for land-based work to engage individuals in transformative processes.

In order to complete this unit, learners will need experience of working with and supporting vulnerable adults in a social enterprise setting, such as a Care Farm or Camphill Community.

Content overview

Learning outcome 1: Human transformative potential within the farm organism
Learners should be introduced to the potential therapeutic impact that working with the land can have. They should be introduced to theories and approaches which explore the potential therapeutic and transformative benefits of working within a farm organism. Amongst other principles, learners should be introduced to concepts of inner and outer experiences and within this context, consider the idea of the heart as centre of the individuality. Learners should also be introduced to theories regarding the three planes of space. They should also consider the significance of a holistic approach to supporting cognitive, practical and emotional development and transformation. Learners should be introduced to Steiner's principles of the seven life processes, human development in seven year stages, as well as the relationship between individuality and the living world (Steiner, R). Learners should be introduced to concepts of therapy through land as well as exploring land based methods for supporting and enabling vulnerable adults. This might include working with and supporting adults in a social enterprise setting, such as Care Farms and Camphill Communities. Learners should have the opportunity to engage in exercises on the land which will help them to reflect on their own experiences.

Learning outcome 2: Facilitating farm based activities with transformative potential
Learners should identify a range of tasks which may be engaged to meet the needs of individuals and which have the potential to facilitate transformative experiences. Learners should monitor and explore the behaviour and well-being of those they are working with before, during and after the tasks.

Learning outcome 3: Identifying how the farm organism can support an integrative approach to emotional, cognitive and practical development in vulnerable individuals
Learners should reflect on their experiences of working with and supporting adults in a social enterprise setting, such as a Care Farms or Camphill Community. Learners should

reflect on their observations and identify ways in which the farm organism has supported an integrative approach to emotional, cognitive and practical development in vulnerable individuals.

Learning outcomes **The learner will:**	Assessment criteria **The learner can:**
1. Understand the potential for human transformation when working with the farm as an organism	1.1 Discuss the potential for human transformation in others working with the farm as an organism
	1.2 Reflect on own transformative experiences of working with the farm as an organism
2. Be able to facilitate farm based activities that support and enable vulnerable individuals	2.1 Facilitate individuals in farm based activities that support and enable vulnerable individuals
3. Be able to identify how the farm organism can support an integrative approach to emotional, cognitive and practical development in vulnerable individuals	3.1 Identify how the farm organism can support an integrative approach to emotional, cognitive and practical development in vulnerable individuals

Additional Requirements for Delivery

The Guided Learning Hours for this unit should take place within a work-based learning environment (either on a farm or garden), under the supervision of an employer or other supervising subject expert. The subject matter of this unit requires substantial practical experience; therefore a significant proportion of the learning hours are attributed to independent work-based learning.

BDFG-L3-unit37
Biodynamic On-Farm Processing

Unit code	A/508/1499	**Guided Learning Hours (GLH)**	10
Unit level	3	**Total Qualification Time (TQT)**	30

Unit aim

This unit aims to provide learners with the knowledge and understanding necessary to manage on farm value added products.

It can be of great benefit for the biodynamic practitioner to produce value added products on the farm. This may include a wide variety of products from green woodwork and charcoal to on-farm processes. For the farm, this increases the potential income from the produce of the farm but it can also offer activities that can bring the public on to the farm. For each value added product there will need to be attention paid to the necessary processes, requirements, markets and any applicable regulations and certification.

Content overview

Learning outcome 1: Principles of value added processes on own holding
Learners should explore the possibilities for value added products on their own holding. This is likely to include on farm food processing, but other activities should also be explored. The consequences and benefits of adding another activity to the farm may be considerable, so careful assessment should be done around the activity.
Selecting a suitable activity may involve consideration of any or all of the following: Demeter Processing Standards, certification, health and hygiene requirements and training, HACCP, building/workspace/physical requirements, record keeping, appropriate processes (such as sterilisation, pasteurisation, fermentation, quality control, etc.), labour requirements, required equipment or machinery, packaging and labelling requirements (including sell by dates), and storage.
The possible benefits may include consideration of: the development and maintenance of quality, meeting demand from customers, ecological benefits and social aspects.
Financial implications of all of the above should be considered.
Learners should be encouraged to reflect on how the value added enterprise integrates with the rest of the farm organism in terms of financial, practical and social relationships.

Learning outcome 2: Contributing to a value added farm process
Learners will be given the opportunity to contribute to all aspects of the value added enterprise on the holding. The tutor and learner should define together which areas are applicable.
This may include awareness and application of the following: Demeter Processing Standards, certification, health and hygiene requirements, training, HACCP, record keeping, appropriate processes (such as sterilisation, pasteurisation, fermentation, quality control, etc.), labour requirements, use of required equipment or machinery, packaging and labelling requirements (including sell by dates), and storage.

Learning outcomes **The learner will:**	Assessment criteria **The learner can:**
1. Understand principles of on farm value added processes on own holding	1.1 Assess suitability of on farm value added processes for own holding *This must include: one existing value added process and one potential value added process*
	1.2 Outline the requirements for a value added farm processing enterprise on own holding *This must include: Demeter Processing Standards, certification, health and hygiene requirements, training, HACCP, building/workspace requirements, record keeping, labour requirements, required equipment or machinery, packaging and labelling requirements, storage.*
	1.3 Reflect on impacts of value adding processing on own holding
2. Be able to contribute to a value added farm process	2.1 Use practical skills which contribute to a farm processing enterprise *This must include at least three of the following: sterilisation; pasteurisation; fermentation; quality control; meeting hygiene guidelines; use of equipment or machinery; packaging and labelling; record keeping; storage*

Additional Requirements for Delivery

The Guided Learning Hours for this unit should take place within a work-based learning environment (either on a farm or garden), under the supervision of an employer or other supervising subject expert. The subject matter of this unit requires substantial practical experience; therefore a significant proportion of the learning hours are attributed to independent work-based learning.

BDFG-L3-unit38
Sustainable Resource Management

Unit code	H/508/1500	**Guided Learning Hours (GLH)**	10
Unit level	3	**Total Qualification Time (TQT)**	30

Unit aim

This unit aims to explore issues of sustainability in resource management in the context of a biodynamic farm. Learners will be given the opportunity to assess their own holding and make recommendations.

Biodynamic farms strive to be self-sustaining in many ways. This unit focuses on applying the principle of the farm organism in resource management (i.e. energy, materials, water and waste).

Content overview

Learning outcome 1: Sustainable resource management in the context of the farm organism

Learners should build on the idea of the farm as an organism, exploring how feasible it is to extend that idea to the resource management of the farm. Consideration should include: energy, materials, biological resources and waste.

In the context of the biodynamic farm striving to be self-sustaining, learners should explore where it may be possible to reduce consumption of resources, creatively make the most of resources that already exist on the farm and recycle whenever possible.

Learning outcome 2: Sustainability of resource management on own holding

Learners should select one or more areas in which to review the sustainability of their own holding's resource management. Subject of review may include:

- Energy sources (electricity, gas/oil, diesel, renewables etc.) and consumption (usage from bills and meters); materials (building materials, packaging, fencing, tools, machinery and more).
- Biological resources: water, seeds, fertility (compost, manure, potting compost), feed, live-stock, plants, water
- Waste streams (farm runoff, solid waste, grey water, black water/sewage, recycling etc.)

Learners should reflect on the results of the survey with a view to how the results could be improved.

Learning outcomes **The learner will:**	Assessment criteria **The learner can:**
1. Understand the importance of sustainable resource management in the context of the farm organism	1.1 Describe the importance of sustainable resource management in the context of the farm organism
2. Be able to review the sustainability of resource management on own holding	2.1 Research the sustainability of resource management on own holding *This may include quantitative findings relating to energy sources, materials, biological resources or waste streams*
	2.2 Reflect on the results of sustainability research carried out on own holding

Additional Requirements for Delivery

The Guided Learning Hours for this unit should take place within a work-based learning environment (either on a farm or garden), under the supervision of an employer or other supervising subject expert. The subject matter of this unit requires substantial practical experience; therefore a significant proportion of the learning hours are attributed to independent work-based learning.

BDFG-L3-unit39
Fencing

Unit code	K/508/1501	**Guided Learning Hours (GLH)**	10
Unit level	3	**Total Qualification Time (TQT)**	30

Unit aim

This unit aims to provide learners with the knowledge and skills to erect a fence which is fit for purpose.

Fencing is one of the primary needs for any holding, so it is important that learners have the knowledge and skills necessary to independently erect fences suited to the needs of the holding. Learners also need to be aware of Health and Safety issues around fencing and to be able to carry out the activity of fencing safely.

Content overview

Learning outcome 1: Principles of fencing
Learners should be introduced in a practical way to permanent fencing. This should include different types of fences suited to different situations (select from: livestock, post and rail, electric, rabbit fencing, stone walls, laid hedges and others), an exploration of different materials and the qualities of those materials (posts, stakes, strainers, high tensile wire, barbed wire, mild steel wire etc.), types of gates (field gates, kissing gates, dog gates etc.) and stiles. Health & Safety, labour and costing considerations should also be taken into account.

Learning outcome 2: Erecting fencing
Learners should become practiced at independently erecting fences. This includes: knocking in posts, straining wire or post and rail, change of direction posts (where applicable), and use of tools (e.g. strainers, post knocker, pliers, etc.).

Learning outcome 3: Maintaining fencing
Learners should also become practiced in repairing and maintaining existing permanent fences.

Learning outcomes **The learner will:**	Assessment criteria **The learner can:**
1. Understand the principles of fencing	1.1 Evaluate different fencing types *This must include three of the following: wire; electric; wood; stone walls; laid hedges.*
	1.2 Explain considerations for planning a fence *This must include: materials; layout considerations; purpose of fence; costings; health and safety considerations.*
2. Be able to erect fencing	2.1 Demonstrate how to erect fencing *This must include a minimum of two types of fencing*
3. Be able to maintain fencing	3.1 Demonstrate how to maintain fencing *This must include: fencing repairs; maintenance of gates; health and safety considerations.*

Additional Requirements for Delivery

The Guided Learning Hours for this unit should take place within a work-based learning environment (either on a farm or garden), under the supervision of an employer or other supervising subject expert. The subject matter of this unit requires substantial practical experience; therefore a significant proportion of the learning hours are attributed to independent work-based learning.

Section 3:
Delivery Requirements

The following guidance is for delivery of all units. Where units have additional specific delivery guidance, this is included in the unit descriptor.

This qualification is vocational in nature, so it is vital that the learning experience allows for self-direction and is an experiential and active process. Learners should be given plenty of opportunity to reflect on knowledge and skills as well as developing practical skills with the support and supervision of teachers and work place supervisors.

The units have been designed to support learner centred work-based approaches, which encourage learner investigation, enquiry and reflection, alongside more traditional teacher centred techniques. The delivery process should be based around the development of knowledge and understanding within a practical land-based context.

It is important that the approach to delivery acknowledges multiple learning styles and accommodates the practical nature of the subject matter. Different learning styles should be supported through a range of delivery materials and class activities, with an emphasis on the necessary skills development inherent in this qualification.

Independent learning should be supported by home study. Learners will also be required to engage in unsupervised work-based learning in a land-based setting.

Section 4:
Assessment & Quality Assurance

4.1 Our Approach

The Crossfields Institute approach to quality assurance is underpinned by educational values which address the development and transformation of the whole human being. In this qualification teaching, learning and assessment should be interconnected in order to support each individual to reach his or her full potential.

The following guidance is provided to support centres and learners in understanding this qualification's requirements for assessment and how the assessment processes will be monitored.

4.2 Assessment Requirements

This qualification is assessed through a portfolio of evidence. Learners must meet all assessment criteria in the unit before they can be awarded that unit.

We encourage a holistic approach to assessment where appropriate; this means using assessment tasks which cover elements of more than one unit.

Types of assessment method for this qualification may include:

- written assignments
- reports
- presentations
- tutor observation
- products
- reflective journaling
- professional discussion
- witness testimony

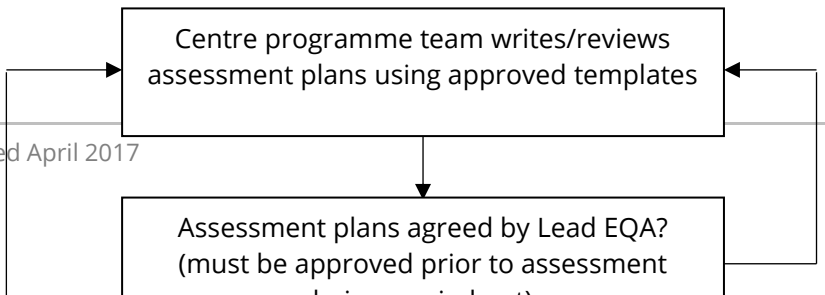
More detailed guidance relating to the use and meaning of assessment criteria verbs and evidence requirements is provided in **Appendix 1.**

4.3 Quality Assurance Process

The primary aim of the Crossfields Institute Quality Assurance Team is to support centres in delivering the best possible learning experience and high levels of achievement for learners.

Centres will be allocated an External Quality Assurer (EQA) by the Crossfields Institute Quality Assurance Team. The Lead EQA for this curriculum area will also be involved in reviewing assessment plans.

Centres delivering this qualification are required to follow this Crossfields Institute Quality Assurance process:



4.4 Assessment Planning Guidance

This qualification uses a centre devised approach to assessment. In planning their assessments, centres should ensure that assessment activities:

- are fit for purpose
- can be delivered efficiently
- meet the assessment criteria
- permit Reasonable Adjustments to be made, while minimising the need for them
- allow each learner to generate evidence which can be authenticated
- allow the specified level of attainment detailed in this specification to be reached by a learner who has attained the required level of knowledge, skills and understanding
- allow assessors to be able to differentiate accurately and consistently between a range of attainments by learners

They should also ensure that:

- sufficient time is allowed for assessment planning
- assessment tasks do not produce unreasonably adverse outcomes for learners who share a common attribute
- methods of assessment are in line with the assessment requirements in this specification
- reasonable timescales for assessment and feedback are given to learners
- a timely quality assurance process is conducted

4.5 Training and Support

To support centres in carrying out high quality assessment and quality assurance practice, the following training and support measures have been put in place for this qualification:

- All centre assessors and quality assurance staff for this qualification are required to meet National Occupational Standards for assessors and IQAs. National qualifications (NVQs) are available for these roles. Crossfields Institute can also provide customised assessor and IQA education as well as review of assessor and IQA practice.
- Assessors and IQAs must keep an up to date CPD log and be able to demonstrate the relevance of their CPD for this qualification and their role.
- Handbooks, exemplars and templates are available from the Crossfields Institute Quality Assurance Team.
- Where required, a customised Quality Assurance Action and Development Plan will be provided by Crossfields Institute for centres.

Please note: there may be a charge for training and resources provided by Crossfields Institute.

Section 5:
Policies and Procedures

Crossfields Institute has policies and procedures in place to support centres and learners. All centres must also implement their own policies, which comply with Crossfields Institute's requirements – these will be checked during centre approval and in subsequent centre monitoring activities. It is the centre's responsibility to make relevant policies available to learners.

Relevant policies include:

- Learner Complaints and Appeals Policy: which allows learners to take action if they feel they have been treated unfairly.
- Reasonable Adjustments and Special Considerations Policy: which allows centres to make any necessary adjustments to assessments in the light of learners' individual circumstances.
- Malpractice and Maladministration Policy: which gives a framework through which concerns about the delivery and assessment of the qualification can be addressed.
- Equality and Diversity Policies: which ensures centres treat learners fairly and without any bias.

Crossfields Institute Policies, and other key documents, are available on our website at www.crossfieldsinstitute.com/resources Learners should ensure they also refer to the policies and procedures of the centre with which they are registered.

Appendix 1: Verb Explanation and Evidence Requirements

The following is provided for guidance only. A holistic approach to evidencing multiple assessment criteria is encouraged. Word counts are provided for guidance and can combined and/or merged when evidencing multiple assessment criteria (learners should seek guidance from tutors in how to approach this).

Assess – *Make an estimated or evaluative judgement**:*** Written explanation with conclusion 200 – 400 words; individual verbal account evidenced by witness statement or tutor observation.

Carry out *Complete a task or activity:* Tutor observation; witness statement; video; completed records; photos can be used as supportive evidence. (These methods are also relevant for the verb “maintain”)

Compare – *Examine and explain similarities and differences between two or more ideas/ objects etc.:* Written explanation 200 – 400 words; individual verbal account evidenced by witness statement or tutor observation; photos with annotations; drawings with labels;

Consider – *Ponder, contemplate, demonstrate a thought process in relation to something:* Written explanation 200 – 400 words; individual verbal account evidenced by witness statement or tutor observation; group discussion evidenced by witness statement or tutor observation.

Create – *Make, devise, bring into being:* An artefact; artistic creation (e.g. drawing, painting etc.); tutor observation; witness statement; video; photos.

Describe - Written explanation 200 – 400 words; individual verbal account

Define - *State definition clearly:* Written description of 150 – 300 words; individual verbal account evidenced by witness statement or tutor observation; group discussion evidenced by witness statement or tutor observation.

Demonstrate – *Give practical explanation or demonstration of applied skill:* Tutor observation; witness statement; video; photos can be used as supportive evidence.

Design – *Prepare plans for, sketch out, illustrate the planned look and function of something:* Written account of a design process; drawing with labels; artistic representation with labels; video; photos with annotations.

Discuss – *Give a detailed account including differing opinions/ viewpoints**:*** Written discursive account (more than 200 words – specific word counts to be provided by tutors); individual verbal account evidenced by witness statement or tutor observation; group discussion evidenced by witness statement or tutor observation.

Explain – *Make an idea or situation clearly using detailed explanation and possibly illustrative examples**:*** Written explanation 200 – 400 words; individual verbal account evidenced by witness statement or tutor observation.

Evaluate - *Review evidence from different perspectives and come to a valid conclusion or reasoned judgement:* Written account 200 – 500 words; individual verbal account evidenced by witness statement or tutor observation.

Identify – *Establish who or what something is:* Written description 50 – 300 words; photos with annotations; drawings with labels; individual verbal account evidenced by witness

statement or tutor observation; group discussion evidenced by witness statement or tutor observation.

Illustrate – *Give clear information or description with examples:* Written description 50 – 300 words; photos with annotations; drawings/ diagrams with labels; individual verbal account evidenced by witness statement or tutor observation.

Provide – *Produce, make, present, create, bring or find through learning or creative ability*: Reflective documentation of a process; artefact; tutor observation; witness statement; video; photos.

Reflect – *Reflective account of actions, experiences or learning with indications for the future**:*** Written account (word count dependent on tutor guidance); Artistic reflective representations with explanations; individual verbal account evidenced by witness statement or tutor observation.

Research - *A study of a subject to discover new information or reach a new understanding of it.* Written account including brief data analysis (200-400 words); Artistic representations with explanations; individual verbal account evidenced by witness statement or tutor observation.

Summarise - *Give the main ideas or facts in a concise way.* Written description 50 – 300 words; photos with annotations; drawings with labels; individual verbal account evidenced by witness statement or tutor observation

Appendix 2 Reading List

Essential Reading

Steiner, R	1997	Agriculture	Biodynamic Farming and Gardening Association
Smith, R T	2011	Cosmos Earth and Nutrition	Sophia press
Thun, M	annual	Biodynamic Planting and Sowing Calendar	Floris Books
Sattler, F & Wistinghausen, E	1994	Biodynamic Farming Practice	BDAA
Waldin. M	2015	Biodynamic Gardening	Doris Kindersley
Masson, P	2011	Biodynamic Manual	Floris Books
BDA	2013	Demeter Certification Production Standards	BDA

Recommended Reading for Specific Subject Areas

Capon, B	2010	Botany for Gardeners	Timber Press
Colquhoun, M & Ewald, A		New Eyes for Plants: Workbook for Plant Observation and Drawing	Hawthorn Press
Davies, G & Lennartsson, M		Organic Vegetable Production: A Complete Guide	The Crowood Press
Davies, G & Turner, B	2008	Weed Management for Organic Farmers, Growers and Smallholders: a Complete Guide	The Crowood Press
Erbe, H	2003	Hugo Erbe's New Bio-dynamic Preparations	Mark Moodie
Goethe, J & Miller, G	2009	Metamorphosis of Plants	MIT Press
Grohmann, G		The Plant, Vols. I and II (tutor selections)	Bio-dynamic Farming and Gardening Association
Hall, J & Tolhurst, I	2009	Growing Green	Vegan Organic Network
Hauschka, R	2008	Nutrition: A Holistic Approach	Rudolf Steiner Press

Howard, A	2011	The Soil and Health: A Study of Organic Agriculture	Benediction Classics
Klaus, J A	2015	Dairy Farming	CreateSpace
Klett, M & Edmunds, F	2009	Tomorrow's Agriculture	Biodynamic Farming and Gardening Association
Koenig, K	2009	Earth and Man	Biodynamic Farming and Gardening Association
Koepf, H	1980	Compost	Biodynamic Farming and Gardening Association
Lampkin, N	2002	Organic Farming	Old Pond Publishing
Lampkin, N Measures, M Padel , S	2012	Organic Farm Management Handbook	Elm Farm Research Centre
Mackenzie, D	1957	Goat Husbandry	Faber and Faber
Pfeiffer, E	2008	Soil Fertility	Lanthorn Press
Pfeiffer, F	2002	Using the Biodynamic Compost Preparations and Sprays in Garden, Orchard and Farm	Biodynamic Farming and Gardening Association
Pfeiffer, E	2008	Weeds and What They Tell	Biodynamic Farming and Gardening Association
Pollock, M	2012	Fruit and Vegetable Gardening	Dorling Kindersley
Schad, W		Man and Mammals (tutor selection)	Waldorf Press
Schultz, J	2008	Movement and Rhythm of the Stars (tutor selections)	Floris Books
Steiner, R	2001	Harmony of the Creative Word lecture 7	Steiner Books
Steiner, R	2011	Theosophy	Pacific Publishing Studio
Thun, M	2003	Results from the Biodynamic Plant and Sowing Calendar	Floris Books

von Wistinghausen, W & Scheibe, W	2000	The Biodynamic Spray and Compost Preparations Production Methods, Booklet 1	Biodynamic Agricultural Association
von Wistinghausen, W & Scheibe, W	2003	The Biodynamic Spray and Compost Preparations Directions for Use, Booklet 2	Biodynamic Agricultural Association
Wilkinson, R	2001	Rudolf Steiner, an introduction to his world view, anthroposophy	Temple Lodge

Suggested Further Reading

Adams, C, Bamford, K, Early, M, Brook, J	2012	Principles of Horticulture	Routledge
Agate, E	2001	Fencing : A practical handbook	BTCV
Ashwort, S	2002	Seed to Seed	Seed saver publications
Auty, I	2008	The BHS Complete Manual of Stable Management (tutor selections)	Kenilworth Press
Bacchus, P	2015	Biodynamic Pasture Management: Balancing Fertility, Life & Energy (tutor selections)	Acres USA
Batey, T	1988	Soil Husbandry	Aberdeen University Press
Bazeley, K, Hayton, A	2007	Practical Cattle Farming	Crowood Press Ltd
Belanger, J	2011	Storey's Guide to Raising Dairy Goats	Storey
Bell, B	2005	Farm Machinery	Old Pond Publishing
Bell, B & Cousins, S	1997	Machinery for Horticulture	Old Pond Publishing
Bevan, H Coupland Smith, H, Dransfield, R Goymer, J Richards, C	2010	Business Book 1 Level 3	Pearson Education Ltd.
Blowey, R. W.	1985	The Veterinary Book for Dairy Farmers (tutor selections)	Old Pond Publishing
Boyle, G	2012	Renewable Energy	Oxford University Press
Brady, N.C & Weil, R.R	2013	The Nature and Properties of Soil	Prentice Hall

Braungart, N.C & McDonough,	2009	Cradle to Cradle	Random House
Briggs, S	2008	Organic Cereal and Pulse Production	The Crowood Press
Buczacki, S Harris, K	2005	Pests, diseases and disorders of garden plants	Harper Collins
Cardell, K	2012	Practical Sheep Keeping	Crowood Press Ltd
Chamberlain, A & Wilkinson, J	1996	Feeding the Dairy Cow	Chalcombe Publications
Chambers, N Simmons, C Wackernagel, M	2000	Sharing Nature's Interests	Earthscan
Coleby	2001	Natural Goat Care	Acres USA
Coleby, P		Natural Sheep Care	Acres USA
Coleman, E	1995	The New Organic Grower: Master's Manual of Tools and Techniques for the Home and Market Gardener	Chelsea Green
Common Ground Editorial Committee	2000	Common Ground Book of Orchards: Community, Conservation, and Culture	Common Ground
Conroy, D	2008	Oxen: A Teamster's Guide	Storey
Cook, W	2006	The Biodynamic Food and Cookbook: Real Nutrition that doesn`t cost the Earth	Clairview Books
Crawford, M	2001	Directory of apple cultivars	Agro forestry research trust
Cubinson, S	2009	Organic Fruit Production and Viticulture	The Crowood Press
Damerow, G & Rice, A	2008	Draft Horses and Mules: Harnessing Equine Power for Farm and Show	Story Publishing
Davidson, N	1993	Sky Phenomena: A Guide to Naked Eye Observation of the Stars	Lindisfarne Books
De Baracli Levy, J	1952	Herbal Handbook for Farm & Stable	Faber and Faber
Deppe, C	1990	Breed your own vegetable varieties	Little, Brown
Diamond, J	1998	Guns, Germs and Steel: a short history of everybody for the last 13,000 years	Vintage
Dunlop, S	2008	Phillip's Guide to Weather Forecasting	Phillip's

Fairlie, S	2010	Meat	Permanent Publications
Grant , N	2008	Sewage solutions, Answering the call of nature	Centre for Alternative Technologies
Grotzke, H	2009	Biodynamic Greenhouse Management	Biodynamic Farming and Gardening Association
Hall, K	2008	Green Building Bible	Green Building Press
Harwood, D	2006	Goat Health & Welfare : A Veterinary Guide	Crowood
Hawker, M Keenlyside, J	1985	Horticultural Machinery	Longman Higher Education
Howard, L	2010	Essay on the Modifications of Clouds	Kessinger Pubishing
Hubbard, C	1992	Grasses: A Guide to Their Structure, Identification, Uses and Distribution.	Penguin
Huese, A	2012	Cut Flower Grower's Handbook	Lulu
Keats, B	2009	Betwixt Heaven and Earth	BFGA
Klocek, D	1991	Weather and Cosmos	Rudolf Steiner College
Langhans, R	1990	Greenhouse Management: a guide to Structures, Environmental Control, Materials Handling, Crop Programming and Business Analysis	Halcyon Press
Macleod, G		Goats : Homeopathic Remedies	Daniel
Mazoyer, M Roudart, L	2006	A History of World Agriculture: From the Neolithic Age to the Current Crisis	Routledge
Meadows, D Meadows, H Randes	2004	Limits to Growth: The 30-Year Update	Chelsea Green Publishing Company
Mowlem, A	1988	Goat Farming	Farming Press
Nastati, E		4 Aspects of the Agricultural Organism	Considera
Navazio, J	2013	The Organic Seed Grower: A Farmer's Guide to Vegetable Seed Production	Chelsea Green Publishing
Nelson, P	2011	Greenhouse Operation and Management	Prentice Hall

Turner, N	2009	Fertility Pastures	Acres USA
Peters & Ball	2002	Reproduction in Cattle (tutor selections)	Wiley-Blackwell
Pfeiffer, E	2009	Chromatography Applied to Quality Testing	Biodynamic Farming and Gardening Association
Prinzing, D	2012	50 Mile Bouquet: Seasonal, Local and Sustainable Flowers	St. Lynn's Press
Radford, A	2002	A Guide to Stock Fencing (tutor selections)	Crowood Press
Raphael, E	2012	Raphael's Astronomical Ephemeris	W Foulsham & Co Ltd
Reece, W O	2010	Functional Anatomy and Physiology of Domestic Animals	Wiley-Blackwell
Roberts, M	2005	Farm and Smallholder Fencing (tutor selections)	Gold Cockerel Books
Schmidt, D	2013	Life Forces - Formative Forces: Methodology for Investigating the Living Realm	Hawthorn Press
Schwenk, T	1996	Sensitive Chaos	Rudolf Steiner Press
Seles, P	2010	The Agriculture Course, Koberwitz, Whitsun 1924: Rudolf Steiner and the Beginnings of Biodynamics	Temple Lodge Publishing
Smith, D J	2008	Discovering Horse-Drawn Farm Machinery	Shire Publications
Soil Association Technical Guide	2000	Organic Grassland Management and Forage Conservation	Soil Association
Steiner, R	2013	An Outline of Esoteric Science chapter 2 and 4	Anthroposophic Press
Steiner, R	1999	Bees	Steiner Books
Steiner, R	1995	Intuitive thinking as a spiritual path; a philosophy of freedom	Anthroposophic Press
Steiner, R	1998	The Cycle of the Year	Steiner Books Inc
Steiner, R	1998	The Festivals and Their Meaning	Rudolf Steiner Press
Sturdivant, L	1992	Growing Flowers for Sale	San Juan naturals
Tautz, J	2009	Buzz about Bees, Biology of a Super Organism	Springer Press

Thickett, B Mitchel, D Hallows, B	2002	Calf Rearing (tutor selections)	Farming Press
Thoday, M	2012	Two Blades of Grass: The Story of Cultivation of Plants	Thoday Associates
Van Houten, C	1999	Awakening the Will: Principles and Processes in Adult Learning	Temple Lodge Publishing
Watts, M	1999	Working Oxen	Shire Publications
Weiler, M	2006	Bees & Honey from Flower to Jar	Floris Books
Whitten, G	1999	Herbal Harvest	Blooming Books
Zeuner, D	2011	The Working Horse Manual	Old Pond Publishing