

Forest Operative Apprenticeship Appendix 2: Training Specification

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Table of Contents (Appendix 2)

1. Introduction	3
2. On Programme Training and Assessment.....	3
3. End Point Assessment	3
4. Indicative Content of Forest Operative Apprenticeship	5
1) Environmental, health and safety and plant health legislation and codes of practice in relation to forestry work. Includes biosecurity, pollution avoidance and control (Core)	6
2) The principles of silviculture including a range of silvicultural systems and their application (Core) .	9
3) The identification of the forest and woodland tree species important in the UK (Core).....	9
4) Threats, pests, diseases and disorders affecting UK trees and woodland (Core).....	10
5) Understanding of the timber supply chain and the actors within it (Core).....	10
6) Mensuration.....	11
7) Harvesting and extraction systems and the factors affecting the cost of bringing timber to market (Core).....	11
8) Ability to communicate effectively with supervisor, colleagues, public and others. Ability to follow both verbal and written/pictorial instructions e.g. maps, planting plans (Core).....	11
9) Maintain tools, machinery and equipment (Core).....	12
10) Maintain and repair open drainage systems, fencing and boundary features and infrastructure (E&M)	13
11) Prepare sites for planting and/or natural regeneration (E&M)	14
12) Planting; including receiving and handling plant materials, planting and post planting protection (E&M)	15
13) Control unwanted vegetation, carry out post planting maintenance, beating, weeding, respacing and cleaning operations. (Core)	16
14) Carry out brashing, formative pruning and high pruning (E&M)	17

1. Introduction

The aim of this document is to set out for training providers, assessment organisations and employers in more detail what is meant by the competencies in the standard and to give more information on assessment and training to support the assessment plan. This document has been written by employers supported by both training and assessment providers and explains in detail their aspirations for a forest operative apprentice.

This information will be made freely and readily available and it is hoped it will be a guide for the development and assessment of the apprentice on-programme and for the development and delivery of the end point assessments.

Ideas and information are included to help employers and training providers structure the portfolio undertaken by the apprentice on-programme that should be completed before starting the end point assessment.

There is additional information on the end point assessments and how these might be delivered and a list of indicative technical content that aims to help all parties understand in more detail the content of the Standard.

2. On Programme Training and Assessment

Employers and training providers are expected to provide training related to all the subject material contained in the apprenticeship standard so that apprentices are familiar with the topics at testing time, and are ready to be tested. This should be compiled into a portfolio to include:

- The mandatory qualifications as stipulated in the standard
- A log book with entries maintained by the apprentice that demonstrates development through the apprenticeship period
- Practical and knowledge tests related to seasonal aspects of forestry work to include, for example, tree identification and common pest/disease/disorder identification
- A record of any other training courses attended and certificates gained, and any other assessment results which illustrate apprentice development e.g. first aid, bat awareness, manufacturer-devised and run events

Employers, in conjunction with training providers, should use a quarterly appraisal system to monitor the progress of the apprentice, provide feedback and guide development. The appraisals should include particular reference to apprentice development and consolidation of skills following the passing of qualifications and attendance at training courses.

3. End Point Assessment

The end point assessment will contain two components. Each component must be passed for the apprentice to meet the apprenticeship standard:

- Online multiple choice tests
- Practical exercise

a. Online Multiple Choice Knowledge Test

An online test under controlled conditions shall be developed to test the knowledge of apprentices covering any areas not covered by the other forms of assessment, these include:

- Current forestry, environmental, health and safety and plant health legislation and codes of practice in relation to forestry work
- The principles of silviculture including a range of silvicultural systems and their application
- An awareness of the key threats, pests and diseases affecting UK trees and woodland
- Understanding of the timber supply chain including the roles of the Landowner, Forest Works Manager, Contractor, Sub-contractor and Agent
- Knowledge of basic mensuration

- Knowledge of harvesting and extraction systems, and the factors affecting the cost of bringing timber to market

b. Practical Exercise with Verbal Questioning

A number of real work practical tests shall be developed to test the knowledge and skills learnt by apprentices during their apprenticeship. One of these tests will be applied and assessed as part of the end point assessment. Following are sample practical exercises.

Health and Safety (both pathways)

Using the Site Map and Outline Risk Assessment given to you by the Forestry Works Manager, complete the following tasks:

- Identify and interpret the various map symbols relating them to your work site
- Carry out a detailed site specific risk assessment noting the significant hazards. Describe any services, above or below ground, and any natural or man-made features (e.g. steep slopes, buildings, roads) that may affect the work. These should be shown on the site map. Note also the likely presence of the public on the worksite.
- Complete a Job Sheet describing the type of work (e.g. planting, fence maintenance, felling, snedding, spraying) and add any relevant aspects such as species, tree size, pesticides and other hazardous materials to be used
- Complete an Emergency Plan including the quality of mobile phone reception and the access route for emergency vehicles and/or nearest Air Ambulance landing site
- Determine and record your Method and Order of Working listing any machines, equipment and materials being used, the Site Safety Rules which will include Guides to industry best practice and additional controls determined by your site specific risk assessment.

Reference Documentation: 'Guidance on Managing Health and Safety in Forestry' FISA 2014. This document provides essential information and guidance on health and safety for all those working in the forestry industry/ woodlands.

Pollution Control [Simulated exercise; both pathways]

The assessment is a practical, observed assessment of your actions to deal with a simulated oil spill in a controlled setting. You will be located in a woodland workshop or woodyard setting and are presented with the following scenario:

You are undertaking a machine service when you accidentally oil spill and are required to manage the situation. All the materials and equipment you need will be to hand and you will be informed of the circumstance but not guided through the process. Whilst dealing with the spill you will be expected to maintain a high level of awareness of your actions, health and safety issues and the potential risk to the environment.

Assessment will take account of the following:

- Compliance with H&S - awareness of substance (COSHH), Policy and procedures
- Workshop/Woodyard Risk Assessment, Appropriate PPE – gloves, boots, goggles, coveralls
- Emergency plan and who to contact
- Actions taken – use PPE, check work area for additional risks
- Equipment used – apply appropriate quantity of absorbent material
- Disposal of waste material in accordance to best practice
- Detailing of assistance and who would be notified
- Record keeping

4. Indicative Content of Forest Operative Apprenticeship

Table one shows how the units of learning described here cover the standard. In some areas similar items are grouped together, in others items that have significant amounts of content are split apart.

The forest operative standard has mandatory qualifications in the standard. The content of these are agreed between relevant awarding organisations and employers. Where content is covered by these qualifications this is indicated and any consolidation or testing should be done in line with them.

There are several behaviours in the Standards and these are:

- Strong work ethic, including reliability, pride in work, attention to detail, spatial awareness and stamina
- Ability to work effectively both within a team environment and as a self-motivated lone worker
- Willingness to learn and contribute to own continuing professional development
- Ability to work outdoors in all weather conditions
- Ability to adapt to changes in conditions, technologies, situations and working environments
- Strict compliance with and disciplined approach to identification, management, mitigation and avoidance of risks and hazards for both safety and the environment

Behaviours have not been expanded upon as they are self-explanatory. This document focuses on the skills and knowledge. It is however expected that quarterly appraisal records, feedback and witness testimonies will reflect the apprentices' achievement of the required behaviours.

Table 1: Unit mapping to the standard

Section	Pathway	Wording in 'standard'	Where covered
Knowledge	Core	Current environmental, health and safety and plant health legislation and codes of practice in relation to forestry work	Unit 1
Knowledge	Core	The principles of silviculture including a range of silvicultural systems and their application	Unit 2
Knowledge	Core	The identification of the forest and woodland tree species important in the UK	Unit 3
Knowledge	Core	The key threats, pests and diseases affecting UK trees and woodland	Unit 4
Knowledge	Core	The timber supply chain including the roles of the Landowner, Forest Works Manager, Contractor and Agent	Unit 5
Knowledge	Core	Basic mensuration	Unit 6
Knowledge	Core	Harvesting and extraction systems, and the factors affecting the cost of bringing timber to market	Unit 7
Knowledge	Core	The long-term effects of tree establishment, and the factors affecting the decision making process	Unit 2
Skill	Core	Maintain good standards of practice in: health and safety; plant health and biosecurity; pollution avoidance and control	Unit 1
Skill Core	Core	Ability to communicate effectively with supervisor, colleagues, public and others	Unit 8
Skill	Core	Ability to follow both verbal and written/pictorial instructions (eg maps, planting plans)	Unit 8
Skill	Core	Maintain tools, machinery and equipment	Unit 9
Skill	Core	Carry out maintenance of chainsaw and cross-cut felled timber	Qualifications
Skill	Core	Fell and process: trees up to 380mm by hand tool and chainsaw	Qualifications Hand tools: 11, 13 & 14
Skill	Core	Control the impact of pests, diseases and unwanted vegetation	Unit 4 & 13
Skill	Core	Use hand winches in forestry	Qualifications

Skill	Harvesting	Fell and process trees over 380mm, including assisted felling techniques	Qualifications
Skill	Harvesting	Accurately measure and record the volume of both standing and felled timber	Unit 6
Skill	Harvesting	Sort timber to product specification	Qualifications
Skill	E&M	Prepare sites for planting and/or natural regeneration including: maintain and repair open drainage systems, fencing and boundary features and infrastructure	Unit 10 & 11
Skill	E&M	Maintain good standards of plant and materials handling and storage	Unit 12
Skill	E&M	Plant trees and provide support and protection	Unit 12
Skill	E&M	Carry out non chemical and chemical post planting protection and maintenance, weeding, cleaning and beating-up operations	Unit 11 & 13
Skill	E&M	Carry out brashing, formative pruning and high pruning	Unit 14

1) Environmental, health and safety and plant health legislation and codes of practice in relation to forestry work. Includes biosecurity, pollution avoidance and control (Core)

1.1) Health and Safety

All forestry tasks have elements of risk and are therefore subject to rules, regulations and guidelines relating to Health & Safety. These are assessed during the observation of normal working practices in other units. It will be necessary to ensure that candidates are aware that they are being assessed on these more general units and this can be highlighted by ensuring that they sign an agreement before assessments occur. This covers the key activities that are required to monitor and maintain good health and safety practices in the workplace.

Be able to:

- Prepare a risk assessment for a site
- Follow set procedures and requirements for safe systems of work relating to health and safety in the workplace
- Identify any significant risks to health and safety in the workplace take action to control the risks where possible or seek guidance from an appropriate person
- Work in a way that minimises risks to self and others
- Use safe methods of lifting and handling
- Use, handle and store equipment and materials correctly according to instructions and relevant legislation
- Use, handle and store potentially hazardous substances correctly in accordance with instructions and legislation
- Deal with waste safely and correctly in accordance with instructions and relevant legal requirements
- Wear appropriate clothing and protective equipment for the work to be undertaken
- Ensure a good standard of hygiene is maintained at all times
- Follow appropriate procedures when working alone or at risk of abuse
- Stop work immediately if it becomes apparent there is a danger of accident or injury, and take the appropriate action
- Follow procedures safely, correctly and without delay in an emergency situation
- Report accidents, incidents and near misses in accordance with instructions
- Record information as required

Know and understand:

- The main legal duties of an employer for health and safety under current legislation
- The main legal duties and any additional responsibilities of workers in relation to health and safety
- The effects that work-related accidents, incidents and ill health can have on people and businesses
- The main areas of risk in the work environment and the control measures and safe systems of work put in place to control these
- How to identify health and safety hazards
- Who to seek guidance from with regard to health and safety
- The range of alternative and complementary measures to control risks e.g. guarding machinery, personal protective equipment, instruction and training
- The risks of personal injury, contracting disease or other health problems associated with work and how these can be minimised
- The risks of injury associated with lifting and handling and how these can be reduced e.g. mechanical handling aids, safe lifting techniques
- Safe methods of using, handling and storing equipment and materials
- The importance of maintaining machinery and equipment in good working order and operating safely in accordance with instructions
- Safe use, handling and storage of potentially hazardous substances e.g. COSHH
- How hazardous and non-hazardous waste should be dealt with
- Appropriate clothing and protective equipment for different work activities
- The importance of good hygiene
- The risks to others from work activities including members of the public, children, visitors, contractors
- The risks of working in isolation or in remote locations and the need for safe systems of work and emergency procedures
- The types of accidents or injury that may occur in the forestry workplace and how these can be avoided
- The actions to take for different types of emergencies in the relevant area of work including accidents, incidents and near misses
- Records that need to be maintained
- The need to communicate health and safety precautions to others

1.2) Control local pollution incidents

This unit covers avoidance and control of local pollution incidents involving oils, fuel, chemicals and sediment. Control is by constructing barrier ditches and booms and by the use of absorbent materials.

The candidate will be working under the direction of a supervisor or another knowledgeable individual.

Be able to:

- Identify the potential nature, extent and impacts of pollution incidents including preventative measures.
- Treat the pollution incident using the most appropriate method and materials and following agreed pollution control procedures
- Note any changes to the scale or nature of the incident and report these changes to the designated person
- Maintain equipment and machinery used within pollution control in line with manufacturer's instructions
- Maintain effective communication with colleagues and other agencies
- Ensure that relevant legislative and organisational environmental requirements are met including the requirement to contact the water regulatory authorities regarding pollution incidents
- Dispose of used pollution control materials in line with specified procedures
- Keep accurate and up-to-date records as required by relevant legislation and the organisation
- Maintain the health and safety of self and others at all times in accordance with current legislation

Know and understand:

- How to identify hazards and assess risks
- How to interpret risk assessments
- Emergency planning and procedures
- The chain of command and roles of personnel in a pollution incident
- Agreed pollution control measures
- How high pressure, low water volume sprays are used in controlling pollution incidents and pollutants
- The impact of fuels, oils, chemicals and silt as pollutants
- Equipment and machinery that can be used to help control pollution incidents
- The implications of terrain, ground conditions, vegetation type, season and weather on pollution incidents
- The penalties for causing pollution
- How to dispose of pollution control materials
- The use of absorbent materials to control surface borne pollutants
- Responsibilities under current environmental, health and safety legislation and codes of practice

1.3) Biosecurity

People in forestry are at high risk of spreading pests and diseases. They encounter infected material, work at multiple sites and transport tools and material that can carry pests and diseases. By undertaking basic biosecurity every day these risks can be minimised.

Be able to:

- Report pests and diseases to correct authority
- Undertake routine biosecurity measures such as
 - removing debris and soil from clothing, vehicles and machinery before leaving a site
 - Cleaning and disinfecting chainsaws and other cutting tools during maintenance
 - Use a biosecurity kit
 - Correctly dispose of infected waste

Know and understand:

- The definition and principals of biosecurity
- The importance of biosecurity from an environmental, social and financial perspective
- Ways that pests and diseases can be dispersed geographically and means of dispersal in the forestry sector
- The importance of a responsible source of trees
- Legislative requirements relating to plant health
- The features of a high risk situation and what additional actions may be necessary

1.4) Forestry & the Environment

This unit will look at the legislation and systems to ensure that the environment and ecosystems of the forest are protected and not adversely affected by forest operations.

The candidate, working under the direction of a supervisor or other knowledgeable individual will.

Be able to:

- Be involved in producing an environmental risk assessment
- Be involved in implementing forest operations which follow current UK legislation and industry best practice.
- Take part in ecological surveys that will enable the implementation of appropriate forest management
- Give due consideration to the environmental implications of undertaking their duties in the office or in the field

Know and understand:

- The potential impacts of the work on the environment and how these can be minimised, including European Protected Species and sensitive habitats
- Have a basic understanding of and the reasons for producing an environmental risk assessment
- Know and understand current UK legislation relevant to Forestry & the Environment
- Know and understand UK codes of practice relevant to Forestry & the Environment
- Have an understanding of the effects of pollution on the forest environment
- Have an understanding of the effects of climate change on the forest environment

2) The principles of silviculture including a range of silvicultural systems and their application (Core)

This unit will introduce the key silvicultural practices and systems.

Silvicultural practices include the range of methods and techniques for successful management of forest stands, including: regeneration - site preparation, planting or natural regeneration of seedlings, tending and pest control until the plantation is "free to grow"; maintenance and pruning; thinning - pre-commercial spacing and commercial thinning; harvesting.

A silvicultural system is a planned program of silvicultural practices applied throughout the life of the stand of trees to achieve set structural objectives based on management goals. It covers all activities for the entire length of a rotation or cutting cycle. The main objective of conventional silvicultural systems has been to create appropriate conditions for regenerating selected tree species. Silvicultural systems are named by the harvesting method used to achieve that objective.

Know and understand:

- The main silvicultural practices used in UK forestry
- Different seedling types used in plantation establishment, either bare-root or container grown
- A range of factors that influence the choice of species, including biological, ecological and economic
- The need for site preparation and drainage of forest sites
- Techniques for protecting seedlings at the time of establishment
- The key requirements for successful establishment of forest stands by planting or natural regeneration
- The horizontal and vertical structural components of a forest stand, in terms of canopy layers and tree size classes
- Techniques for formative and high pruning of saplings and maturing trees
- Different thinning regimes used in UK forestry (i.e., pre-commercial, systematic, selective, low, intermediate and crown thinning)
- The main silvicultural systems in UK forestry (e.g. coppice, clear fell and continuous cover)
- The difference between rotation and cutting cycle
- The uses and benefits of rides, glades paths and other open space which can be managed as part of a plan for the silviculture of a forest stand
- How and why to complete a job sheet for a range of silvicultural scenarios
- The importance of managing woodland in accordance with the UK Forest Standard (UKFS)

3) The identification of the forest and woodland tree species important in the UK (Core)

Identification of trees and plants is required for many activities in the Forest Operative's role. This unit covers identification of common tree and plant species associated with woodlands and forests. It also gives an understanding how plants are identified and sources of information available.

Be able to:

- Obtain and use various sources of information to accurately identify and name 30 trees
- Use tree characteristics to aid identification
- Identify tree species in all seasons

- Identify common trees grown in Great Britain
- Identify plant species associated with growing trees
- Identify different tree genera from timber samples

Know and understand:

- Basic principles of botanical classification and nomenclature
- How plant characteristics can aid identification (eg leaves, buds, bark and stems, growth habit, flowers, seeds, fruit and timber)
- Different plant and tree life cycles (age classes)
- The preferred growing conditions of different tree species
- The timber use of different tree species
- The effects of properties of different trees on work

4) Threats, pests, diseases and disorders affecting UK trees and woodland (Core)

Management of threats (including invasive species), pests, diseases and disorders is becoming increasingly crucial to UK Forestry. Forest Operatives have an important role; potentially identifying a new problem early so that it can be managed. This unit covers identifying pests, diseases, disorders and invasive species affecting trees, woodlands and forests.

Be able to:

- Carry out all work in accordance with relevant environmental, plant health and health and safety legislation, risk assessment requirements, codes of practice and company policies
- Monitor the trees according to specifications
- Correctly identify the presence of common threats, pests, diseases and disorders
- Establish the extent of the pest population, disease and any disorders
- Promptly report the presence and extent of threats, pests, diseases and disorders to the appropriate person
- Carry out work in a manner which prevents damage to the surrounding area
- Complete records as appropriate

Know and understand:

- Workplace policies and procedures relating to the identification and reporting of threats, pests, diseases and disorders
- Workers responsibilities under environmental, plant health and conservation legislation
- How pests and diseases can be introduced to a site
- Reasons for monitoring trees
- When to carry out monitoring (i.e. frequency and regularity)
- Common types of threats, pests, diseases and disorders
- The problems caused by common threats, pests, diseases and disorders to trees
- Relevant biological control and beneficial insects as they apply to trees within the relevant area of responsibility
- To whom the presence and extent of threats, pests, diseases, disorders and biological control/beneficial insects should be reported
- The potential impact of the work on the environment and how to minimise this

5) Understanding of the timber supply chain and the actors within it (Core)

Forest Operatives are part of a wider supply chain and it is important that they understand the roles of other actors so that they can work effectively as part of this wider network.

Know and understand:

- The roles of the Landowner, Agent, Forest Works Manager, Contractor and Sub-Contractor within the supply chain
- The contents of the FISA Guidance on Managing Health and Safety in Forestry document <http://www.ukfisa.com/assets/files/safetyLibrary/MHSF-2014.pdf>

6) Mensuration

Mensuration is the determination of dimensions, form, age and increment of single trees, stands or whole woods. These may be standing or after felling. The core knowledge gives an understanding of basic mensuration. The advanced aspects cover basic measurements required for a harvesting specialist.

6.1) Basic Mensuration (core)

Know and understand:

- Basic mensuration techniques and terminology (e.g. diameter, length, volume, area)
- Units for measurement
- Tools for measurement

6.2) Advanced Mensuration (harvesting pathway)

Be able to:

- Check the accuracy of girth tapes
- Measure felled timber using appropriate methods
- Measure stacked timber
- Measure diameter at breast height (DBH)

7) **Harvesting and extraction systems and the factors affecting the cost of bringing timber to market (Core)**

7.1) Extraction systems

This unit gives a basic understanding of the different harvesting and extraction systems and the factors involved when making decisions about harvesting and extraction.

Know and understand:

- When motor manual vs mechanised harvesting should be used
- When different equipment should be selected e.g. forwarder vs skidder
- The impact of ground conditions & time of year on extraction systems
- Why assumptions should not be made about what extraction system is most appropriate

7.2) Factors affecting the cost of bringing timber to market

This unit gives a basic understanding of the cost of bringing timber to market and highlights that decisions made during establishment, maintenance and harvesting will have economic impacts as well as external factors such as market conditions.

Know and understand a range of factors influence the cost of bringing timber to the market including:

- Timber species and the varying requirements for different markets
- Timber quality and the varying requirements for different markets
- Selection of harvesting technique and why a particular technique is chosen
- The impact of site and conditions on access e.g. ground conditions, slope, access infrastructure
- How market conditions impact the economics of operations e.g. distance to market, supply and demand
- Availability and costs of supply chain actors e.g. forestry contractors and timber haulage contractors
- Appreciation of the basics of job costing e.g. economies of scale

8) **Ability to communicate effectively with supervisor, colleagues, public and others. Ability to follow both verbal and written/pictorial instructions e.g. maps, planting plans (Core)**

8.1) Ability to communicate effectively

Communication is increasingly important in modern forestry. Forest Operatives must work as part of a team and also represent their organisation professionally. The nature of the work also means good communication skills are important for maintaining health and safety on site.

Be able to:

- Identify the information and knowledge people need and why they need them
- Check that the information and knowledge communicated is current, accurate and complete
- Check and communicate whether the information and knowledge communicated is based on rigorously researched evidence, widely accepted facts or personal opinion
- Communicate in ways that help people to understand the information and knowledge communicated and their relevance
- Confirm that people have received and understood the information and knowledge communicated

Know and understand:

- The importance of checking the currency, accuracy and completeness of the information and knowledge communicated, and how to do so
- The importance of communicating in ways that help people to understand the information and knowledge communicated and their relevance
- The importance of checking and communicating whether the information and knowledge communicated are based on rigorously researched evidence, widely accepted facts or personal opinion
- The importance of confirming that people have received and understood the information and knowledge communicated, and how to do so

8.2) Ability to follow both verbal and written/pictorial instructions (e.g. maps, planting plans)

This unit covers the skills and understanding needed to interpret instructions both written and in the form of maps and plans. This unit covers locating the work site and the specific land / trees where work should be undertaken.

Know and understand:

- The value of written and pictorial instructions
- How maps and plans are used in forestry
- How to read a forestry map and planting plan
- The importance of seeking clarification of written/pictorial instructions if not understood

Be able to:

- Interpret information from written and pictorial instructions (including a map and a planting plan)
- Use information to carry out the specified activities
- Identify a specified location using a map

9) Maintain tools, machinery and equipment (Core)

This covers the routine maintenance of equipment, machines and hand tools and is core for all apprentices. Such maintenance is usually recommended by manufacturers in order to maximise the working life of the equipment or machinery.

If working with chemicals or machinery, appropriate training or certification should be held in line with current legislation and good practice guidance. The relevant FISA Safety Guides with content relating to hand tools should be followed: <http://www.ukfisa.com/safety-information/safety-library/fisa-safety-guides.html>

Glossary:

- Specifications: drawings, schedules, method statements, Standard Operating Procedures (SOPs), manufacturers' guidelines, customer requirements
- Instructions: verbal or written
- Stored energy e.g. springs, belt tension, hydraulic pressure or electrical discharge
- Tools used to carry out the maintenance procedures will include hand tools and power tools
- Waste materials may include hazardous and non-hazardous materials
- Equipment and machines may be manual or mechanical

Be able to:

- Select and prepare equipment, tools and machines for maintenance
- Ensure the equipment and machines requiring maintenance are safe and completely isolated from the power source
- Take the correct precautions to minimise dangers from contamination and hazardous chemicals
- Ensure the work area is safe and in a condition suitable for the maintenance procedure
- Obtain and prepare tools and materials suitable for the maintenance procedure and maintain equipment and machines in accordance with manufacturers' instructions, standard procedures and legislation
- Prevent the escape of substances and deal with waste safely and correctly in accordance with legislation
- Identify the need for advice and assistance and refer to the appropriate person
- Carry out all work in accordance with relevant environmental and health and safety legislation, risk assessment requirements, codes of practice and company policies
- Make sure repaired equipment and tools are in safe working order
- Clean, service and store maintenance tools safely and effectively
- Complete records as appropriate

Know and Understand:

- The equipment, tools and machinery that requires routine maintenance and the reasons for this
- Methods for preparing equipment, tools and machines
- Legislative requirements relating to the maintenance of equipment and machinery
- Levels of responsibility in relation to the maintenance of equipment and machinery and to whom to go for advice
- The dangers created by stored energy and how these should be responded to during the preparation stage
- Hazardous chemicals and substances which may be present and ways in which they should be dealt with
- The type of tools, equipment and materials required for the maintenance procedure
- Types of personal protective equipment and the reasons for and correct use
- Methods for maintaining equipment and machines and the maintenance procedures
- The reasons for maintaining equipment and machinery and the possible consequences of not maintaining them
- The FISA Guides with content relating to hand tools
- Workers responsibilities under current environmental and health and safety legislation, codes of practice and company policies
- How to handle, transport and dispose of waste in accordance with legal and organisational requirements
- How to store tools, equipment and machinery in a safe and effective condition

10) Maintain and repair open drainage systems, fencing and boundary features and infrastructure (E&M)

This unit describes the estate management skills a forester needs and does NOT include construction of forest roads. It is relevant to establishment and maintenance specialists.

The relevant FISA Safety Guides should be followed: <http://www.ukfisa.com/safety-information/safety-library/fisa-safety-guides.html>

Be able to:

- Identify defective structures
- Report the presence of a defect in the structure to the appropriate person
- If appropriate effect immediate repairs in line with manufacturer's instructions, operator capability and management objectives
- Follow instructions regarding any further actions to be taken

Know and understand:

- Which repairs are appropriate to be undertaken and those that should be reported in accordance with manufacturer's instructions and industry good practice guidance

11) Prepare sites for planting and/or natural regeneration (E&M)

This unit is about the preparation of sites for planting and is relevant to establishment and maintenance specialists.

Preparation methods cover manual, pedestrian controlled and tractor mounted plant and equipment. If working with chemicals or machinery, appropriate training or certification should be held in line with current legislation and good practice guidance.

Reference should be made to the relevant safety guides on planting.

Be able to:

- Assess the risks associated with the site and the proposed works
- Carry out an environmental assessment of the site before starting work
- Select and implement appropriate working methods in accordance with the assessed risks
- Select, prepare and use tools and equipment that are appropriate for the work safely and effectively
- Select appropriate preparation methods in line with specifications and the site
- Prepare the site in line with specifications, taking into account relevant conditions e.g. weather, ground conditions
- Make effective use of the available resources
- Remove all waste and surplus materials and dispose of them as specified
- Maintain the security of machinery and equipment on site
- Follow organisational and industry environmental good practice and minimise environmental damage
- Maintain the health and safety of self and others at all times in accordance with current legislation

Know and understand:

- How to identify hazards and assess risks
- How to interpret risk assessments
- The importance of carrying out an environmental assessment of the site and the findings which must be reported
- The emergency planning and procedures relevant to the site
- The different methods of preparing sites for planting
- How to interpret specifications and select appropriate preparation methods
- The effects of site conditions on the selection of cultivation methods
- How to deal with any underground, ground or overhead obstructions
- The types of tools and equipment required and how to maintain and use these safely and effectively
- Why it is important to maintain safety and security of equipment and vehicles when on site
- The correct methods of disposing of surplus materials and/or waste
- The potential impact of the work on the environment and how this can be minimised
- Responsibilities under current environmental, health and safety legislation and codes of practice

12) Planting; including receiving and handling plant materials, planting and post planting protection (E&M)

This unit covers taking delivery of and storage of plants and other materials including taking delivery of plants and materials, checking that they meet the specification and handling and storing them appropriately. It describes planting trees to a given specification. This covers planting and providing after care to trees once planted. It is relevant to establishment and maintenance specialists.

Maintenance covers maintenance of support systems and plants and might involve soil amelioration, watering, repair/replacement of protection or maintenance of support systems

Protection is the protection of the tree from a range of damaging agents such as insects, mammals and the weather. It is not about managing or controlling of pest populations. Types of protection may include tree guards, mulching, fencing, netting, staking, guards and quills, underground systems and population control

Damaging agents may include insects, deer, voles, rabbits/hares, vandals and weather. The relevant FISA Safety Guides should be followed: <http://www.ukfisa.com/safety-information/safety-library/fisa-safety-guides.html>

Be able to:

- Check condition and species of tree in line with planting specification
- Check the bio-security and condition of plants and materials
- Where appropriate report any defects in plants and materials to the relevant person
- Transport and store plants and materials in a manner which minimises damage to the plants and ensures safety and security
- Handle plant material to minimise damage and optimise growth
- Keep accurate, legible and complete records of deliveries
- Maintain the health and safety of self and others at all times in accordance with current legislation
- Assess the risks associated with the site and the proposed planting works
- Select and implement appropriate working method in accordance with the assessed risks
- Transport planting stock and materials in accordance with the planting specification
- Plant trees in line with the planting specification
- Provide support and protection to trees, as per the specification and size of stock
- Carry out plant **protection** in line with the specification avoiding damage to the planted trees and to the environment
- Remove all waste and surplus materials and dispose of them as specified
- Identify the damaging agent on established trees

Know and understand:

- Responsibilities under current environmental, health and safety legislation and codes of practice
- How to interpret specifications and relevant documents
- How to assess the condition of plants and materials against specification
- How to recognise healthy plants
- How to handle and store different types of plants, stock and materials to maintain them in good condition
- How to avoid plant shock and damage when handling, transporting and storing
- Why it is important to maintain safety and security of equipment and vehicles when on site
- How to choose the right quality, compatibility, size and species of stock
- Planting support and protection methods for a variety of trees
- How to select suitable support systems where required
- How to handle and plant different types of plant material to maintain stock in good condition
- How to check the condition and bio-security of these trees to ensure they are fit for establishment
- The problems and aftercare requirements of newly planted trees to ensure successful establishment
- Correct methods of disposing of surplus materials and/or waste
- The appropriate records to be kept and their significance
- The responsibilities of the landowner

- Damaging agents and how to protect against them
- Methods of tree protection and their uses
- Methods of maintenance and how they are applied
- The correct methods of disposing of surplus materials and/wastes
- The potential impacts of activities on the environment and how these can be minimised
- Responsibilities under current environmental, health and safety legislation and codes of practice

13) Control unwanted vegetation, carry out post planting maintenance, beating, weeding, respacing and cleaning operations. (Core)

This is about controlling unwanted vegetation using appropriate methods. It is likely that work will be to a given specification that may define methods to be used but apprentices will be expected to determine how to carry out these methods on site. The following kinds **of unwanted vegetation** should be covered: woody, herbaceous, grass, competing, hazardous, notifiable and excessive.

Control methods may be manual, motor-manual or chemical. "Mechanised" equipment can include brushwood cutter, chainsaw, clearing saw, strimmer etc.

If working with chemicals or machinery, appropriate training or certification should be held in line with current legislation and good practice guidance.

Be able to:

- Assess the risks associated with the site and the proposed works
- Select and implement appropriate working method in accordance with the assessed risks
- Identify vegetation which requires control
- Control unwanted vegetation in line with best practice and/or specification
- Follow organisational and industry environmental good practice and minimise environmental damage
- Maintain records as appropriate
- Remove all waste and surplus materials and dispose of them as specified
- Minimise / avoid damage to surrounding trees, other plants, animals and structures such as fences, paths and signs
- Restore the site to a clean and tidy condition
- Maintain the health and safety of self and others at all times in accordance with current legislation

Know and understand:

- How to identify hazards and assess risks
- How to identify **unwanted vegetation** and the best method of control
- How to assess risks and the **control measures** to be implemented
- How to select appropriate method and equipment for vegetation control
- The basic implications of terrain, ground conditions, vegetation, season and weather
- The impact of using chemicals on the environment and how to minimise environmental damage
- The use of mulching/mulch mats to aid the control of unwanted vegetation
- The potential impacts of the work on the environment and how these can be minimised
- The types of damage acceptable under various circumstances
- The correct methods of disposing of surplus materials and/or waste
- Workers responsibilities under current environmental, health and safety legislation and codes of practice

14) Carry out brashing, formative pruning and high pruning (E&M)

Establishment and maintenance pathway. Pruning can be carried out for various reasons and at many different stages in a tree or stands development. The apprentice will need to be able to judge whether pruning may be required or would be beneficial and how and when to undertake the works. This unit will only deal with ground based pruning and will not cover tree surgery or working at height situations.

Be able to:

- Assess the risks associated with the site and the proposed works
- Select and implement appropriate working method in accordance with the assessed risks and controls required
- Carry out pruning with minimal damage and impact to every tree
- Undertake pruning and brashing in line with Woodland Heritage leaflets - "Formative Pruning" by Gabriel Hemery, Peter Savill and Gary Kerr
- Undertake high pruning in line with Woodland Heritage leaflets – "High Pruning for profit" by Gabriel Hemery, Peter Savill and Gary Kerr
- Identify the species of tree and apply any particular aspects for that species
- Identify common diseases or pests that may be found at the growth stage where pruning is carried out
- Apply good biosecurity controls for each site operation
- Communicate the benefits of pruning to aid selection decision making process
- Demonstrate the selection intensity and efficiency of pruning in a plantation situation
- Make suggestions on when pruning might be beneficial to a tree or stand

Know and understand:

- The basis of knots in timber and how pruning can help reduce defects in timber or a tree
- The ability and restrictions for certain trees to self-prune
- The differences between formative pruning, brashing and high pruning
- How to identify hazards and assess risks
- The management of arisings to reduce further risks
- The safe use, maintenance and selection of different saws, pruners and other hand tools for pruning.
- The quality, safety and damage risks associated with mechanical pruning
- How pruning helps maintain apical dominance
- How pruning can reduce future structural defects in a tree
- Seasonal restrictions on pruning
- When tree surgery would be safer or more efficient for pruning

Appendix 3: Forest Operative Apprenticeship Appraisal Form

This is a resource for employers to use when monitoring the apprentice's progress. It is recommended that appraisals are held as a minimum quarterly, apprentices are given time to prepare off the job and the employer liaises with any external training providers being used.

Apprentice name: [Click here to enter text.](#)

Appraiser name: [Click here to enter text.](#)

Dates of period covered: [Click here to enter text.](#)

Placement absence (days): [Click here to enter text.](#)

Annual leave (days) [Click here to enter text.](#)

Sickness absence (days) [Click here to enter text.](#)

1. Progress

How has the apprentice progressed since the last appraisal? Please refer to targets set at the last appraisal. Please tick one box.

Outstanding Satisfactory Unsatisfactory

Any comments on performance and, if unsatisfactory, which areas need improvement?

2. Skills

How has the apprentice performed in practical tasks and / or test during their work?

Please tick one box.

Outstanding Satisfactory Unsatisfactory

Any comments on performance and, if unsatisfactory, which areas need improvement?

3. Knowledge

How has the apprentice developed their knowledge and performed in any knowledge tests?

Please tick one box.

Outstanding Satisfactory Unsatisfactory

Any comments on performance and, if unsatisfactory, which areas need improvement?

4. Behaviour

Has the apprentice shown (please tick one box for each behaviour):

Pride in their work	Outstanding <input type="checkbox"/>	Satisfactory <input type="checkbox"/>	Unsatisfactory <input type="checkbox"/>
Attention to detail and reliability	Outstanding <input type="checkbox"/>	Satisfactory <input type="checkbox"/>	Unsatisfactory <input type="checkbox"/>
Disciplined approach to safety	Outstanding <input type="checkbox"/>	Satisfactory <input type="checkbox"/>	Unsatisfactory <input type="checkbox"/>
Motivation	Outstanding <input type="checkbox"/>	Satisfactory <input type="checkbox"/>	Unsatisfactory <input type="checkbox"/>
Effective teamwork	Outstanding <input type="checkbox"/>	Satisfactory <input type="checkbox"/>	Unsatisfactory <input type="checkbox"/>
Adaptability to changes	Outstanding <input type="checkbox"/>	Satisfactory <input type="checkbox"/>	Unsatisfactory <input type="checkbox"/>
Willingness to learn	Outstanding <input type="checkbox"/>	Satisfactory <input type="checkbox"/>	Unsatisfactory <input type="checkbox"/>

Any comments on the apprentice's behaviour and attitude:

5. Employer Feedback

Strengths

Areas for improvement

6. Apprentice feedback

The main things I learned during this period

What I would like to improve, and any challenges to achieving my targets

5. Targets set for next period

Key tasks to be completed prior to next appraisal (to be recorded in the log book).

Task	Complete (tick)

Other targets (for example knowledge tests, qualifications or learning)

Task	Complete (tick)

Appraiser Signature: [Click here to enter text.](#)

Date: [Click here to enter text.](#)

Apprentice Signature: [Click here to enter text.](#)

Date: [Click here to enter text.](#)

Appendix 4: Forest Operative Apprenticeship Log Book Template

This log book is an optional template for use by forest operative apprentices to record tasks performed and knowledge learnt on the apprenticeship.

Apprentice Name: [Click or tap here to enter text.](#)

Employer Name [Click or tap here to enter text.](#)

Date [Click or tap here to enter text.](#)

Knowledge and skills write up

Describe tasks you have done and what you have learnt. You might want to include a description of the task, health & safety and environmental considerations. It would be good to include photographs.

Apprentice Signature: [Click here to enter text.](#)

Date: [Click here to enter text.](#)