ALEP

Aboriginal Landcare Education Program

1

ALEP Learning Guides

Trainer's Guide

Greening Australia

CONTENTS

Trainers name:……………………..

ALEP LEARNING GUIDES

The Aboriginal Landcare Education Program (ALEP) started at Greening Australia in the Northern Territory in 1994. ALEP's training is based around practical community projects and employing Aboriginal staff is central to the ALEP philosophy. ALEP focuses on increased employment and healthy lifestyle options for young Aboriginal people, but ensures the whole community from children to older people are included in projects.

The ALEP learning guides were developed for remote Aboriginal and Torres Strait Islander students in the Top End, but with the addition of local resources (such as plant identification books) are very applicable to all areas of Australia. The learning guides are aimed at Certificate 2 students although the content will be relevant to other levels and informal training.

Development of the learning guides

- Don Duggan (pictured) developed the learning guides. Don worked for ALEP from 1996 to 2010 including being the ALEP Coordinator. After many years of delivering training he decided to develop his own learning materials – hence the learning guide project. The guides are based on training work and various projects that Don has carried out in many communities across the Northern Territory and north Queensland. Keeping the material practical and interesting and linked to national training competencies has been a focus. www.triodia.com.au

- Nicholas Smith from Nelumbo Botaniks assisted Don write the content for the guides and has taken most of the beautiful photographs that illustrate the guides (some photos also come from the ALEP collection and other contributors). www.nelumbo.com.au

- Lesley Alford, who worked for Don in ALEP, has assisted with project coordination and editing of the guides. www.denhamia.com.au

- Milton Andrews from Square Peg Design developed the design template for the guides and undertook all the layout work. Milton also drew most of the diagrams and drawings in the guides. www.squarepegdesign.com.au

Many thanks to all the Aboriginal rangers, students, trainers and industry experts who provided feedback and photos during the development of the learning guides.

To purchase the learning guides

The learning guides can be obtained from Greening Australia in Darwin (phone (08) 8947 3793 or email info@nt.greeningaustralia.org.au) and preview copies are available on line (www.greeningaustralia.org.au/community/nt/education-information).

GUIDE SEQUENCE

The learning guides are structured into the following groups:

Getting ready

These guides will help trainers and students plan and carry out their project and they give an overview of work to be learnt in other guides.

1. ALEP Learning Guides - Trainer's Guide

2. Carry Out Natural Area Restoration Works

Recognising plants

These guides teach students to identify plants as well as collect, preserve and record plants for future identification or research.

3. Recognise Plants

4. Collect, Prepare and Preserve Plant Specimens

Growing plants

This series takes students through the processes of growing plants, from collecting the seed, through constructing a simple nursery, to all the steps of propagating plants.

5. Collect, Treat and Store Seed

6. Maintain Properties and Structures

7. Install Micro-irrigation Systems

8. Undertake Propagation Activities

9. Pot Up Plants

10. Tend Nursery Plants

Managing country

These guides are for students undertaking revegetation and other conservation and land management work (there are many aspects of managing country not covered by the guides).

11. Treat Weeds

12 Install, Maintain and Repair Fencing

13. Plant Trees and Shrubs

14. Perform Basic Water Quality Tests

USING THE LEARNING GUIDES

These learning guides are designed as reference materials for both trainers and students.

We have attempted to cover most of what is needed for each subject area, and not oversimplify it. In some cases this means there is more information than an average Certificate 2 student should be expected to understand and remember immediately. It must be kept in mind they are reference materials, designed for the student to refer back to as they develop in their chosen field. The more complex information is often put in Resources at the back of the guide.

Having said this, we hope the information is presented in a format that will appeal to and be used by students, even if they don't use everything in the guide.

Training packages

The following guides are linked to Certificate 2 units of competency from the *Agriculture, Horticulture and Conservation Training Package*:

- Carry Out Natural Area Restoration Works
- Collect, Prepare and Preserve Plant Specimens
- Install, Maintain and Repair Fencing
- Install Micro-irrigation Systems
- Maintain Properties and Structures
- Plant Trees and Shrubs
- Pot Up Plants
- Recognise Plants
- Tend Nursery Plants
- Treat Weeds
- Undertake Propagation Activities

These two remaining guides are linked to units of competency from other packages but it is possible to import them into the *Agriculture, Horticulture and Conservation Training Package* as electives:

- Collect, Treat and Store Seed
- Perform Basic Water Quality Tests

Structure of each learning guide

Each guide is linked to a unit of competency from a national training package (see page 8 for detailed information). Across each of the guides there are some common components:

- A contents page.
- An introduction page summarising equipment needed and assignments.
- A safety section including a safety checklist.
- Tools and materials lists.
- A finishing up section including waste disposal and tool maintenance.
- Three assignments per guide and five additional activities per guide.
- A resources and reference section.

PROJECT BASED TRAINING

The ALEP learning guides are designed to be delivered in a practical project based situation. The main assignments in many of the learning guides are based around a project – it is often the case that many performance criteria are to be assessed as the student undertakes their project – assessment tools will be needed that allow for this.

It is not expected that a Certificate 2 student would be able to undertake these projects on their own, the projects should be team based with a more experienced supervisor or trainer overseeing the work.

Community based projects

An effective training program will be based around a project that is owned by the local community. Locate a real local project for the students to work on, it may be a school garden, revegetation site, or a community park etc. Then attempt to link all training to some aspect of the project. Putting the training in context will really help students to grasp the concepts.

The most successful training projects will be based on an existing community priority. The project will drive the training, rather than the other way around. Involving the community in the design and delivery of the training will further strengthen the outcome.

You need to build solid local relationships and an understanding of the local situation to develop a good project. This will help you to ensure that local people have been part of the process of building the project. It is essential to work at the grass roots and spend time getting to know people by sitting down out on country and listening to people's view of the world and what they see as issues. Aboriginal communities seem to have an endless stream of advisors and visitors and there are new people and faces all the time – developing a long term relationship will really help make your work more effective.

It's important to really understand local conditions, to identify the right traditional owners to ensure the work has proper authority, and to understand that housing, health, education and social issues have high priorities. By doing it right and keeping other priorities in mind the project will remain a priority at a local level.

Holistic training and assessment

The training is aimed to be very practical and project based and it is likely students will work through a group of learning guides at once. For example, you may learn about plants, build a nursery, grow plants, then plant them in a revegetation project – this could potentially utilise all the learning guides.

Carry Out Natural Area Restoration Works provides a good overview for linking all the guides together. That guide assumes you will work through a number of other guides to get through the work (ie. *Treat Weeds* for the weed component). There will be units of competency not covered by these learning guides that may also be relevant to the project.

Holistic assessment is also recommended, with students being assessed on a number of relevant units of competency at once.

IMPORTANT

The trainer should maintain ongoing communication with the community to ensure the training continues to happen in line with community needs and priorities.

Training in the field

ALEP's experience in working with students who have chosen a practical career in land management, is that they respond best to field based, practical training. A classroom based approach is less likely to engage these students.

Undertaking field exercies as early as possible will be most effective. For example, for *Recognise Plants*, spend time in the field actually looking at plants, feeling and describing them, and finding out what the students already know, then later go and start looking at more formal techniques using books etc. For another example: organise trips to a nursery when doing the propagation guides so students can see and hopefully practice the techniques in a real situation.

Seasonal planning

Land management activities are usually very seasonal. Plan your training around the seasons so that training is real, relevant and effective. An example of a Top End training plan may be something like this.

Annual Training Plan for the Back Blocks Landcare Group Creek Revegetation Project				
Months	**Project activities**		**Learning guides**	
Jan to April	Spraying weeds	Collect seed throughout year to cover all species	Treat Weeds	Carry Out Natural Area Restoration Works Collect , Treat and Store Seed
May to October	Growing seedlings		Undertake Propagation Activities	
	Mowing and slashing for fire management		Tend Nursery Plants	
	Nursery and shed maintenance		Treat Weeds	
			Maintain Properties and Structures	
November to December	Planting for revegetation (after first rains)		Plant Trees and Shrubs	
	Spraying weeds (when weeds start germinating)		Treat Weeds	

Permits and permissions

Many of the learning guides mention the need for getting the permission of the landowners and relevant permits. Arranging this for the training project is beyond what a Certificate 2 student would generally be expected to do (although involving them in the process will add to the training).

However as the trainer you need to make sure the project has the relevant permissions and permits for both the project and any activities (such as seed collecting). You will need to contact loval government bodies, land councils, government departments and private landowners as relevant.

SOME HINTS FOR DELIVERING TRAINING

Understand your student's needs

- Ensure students have access to transport to the work site and can bring their own lunch.

- Establish if support is needed in obtaining personal protective equipment.

- Some participants will be happy with an informal training outcome, whilst others will be interested in pursuing an accreditation. Training programs should allow for this.

- Recognise that some students may need extra assistance with language, literacy and numeracy skills and attempt to get extra support for this in addition to tailoring training appropriately.

- Be creative and come up with training activities that minimise reading, writing and paperwork as much as possible.

- The learning guides themselves will have too much writing for some students and will need careful interpretation and guidance to be effective. Ensure you have real life examples of tools, reference books and other materials for the students to get their hands on.

- Ensure you do not assess students using tools that assume good literacy if the skill itself does not require good literacy. Use practical demonstrations and oral questioning rather than written evidence wherever possible. Video recording and photographs provide good options for evidence.

Training tips

Trainers should already be aware of good training and communication techniques and this guide does not aim to duplicate that information. However a few pointers may help (there are lots more, this is just a start):

- Train in the field using a real project to work on.

- Actually work through the various tasks, don't just read about it.

- Use a story telling environment with everyone sitting together and contributing rather than just being the teacher up the front.

- Bring in local experts who can discuss traditional knowledge.

- Don't think it is obvious that you want something, ask for it directly. Use direct language – don't ask "Would you like to dig that hole?" when you mean "Please dig that hole for me".

- Make the safety sections as interesting as possible so students don't gloss over them - consider dramatisations and set ups.

- Labelling tools and equipment may help with learning their names.

- Work placements and other industry exposure should be arranged to allow students to see real job examples and to develop an industry network of their own.

Employing the right trainers

Having a trainer the students respect and vice versa is more likely to create an atmosphere of enthusiasm and willingness to learn.

To carry out grass roots, practical training it is essential to get the right people as trainers. The trainer needs to be able to develop the local project as well as engage their students. You need trainers who are comfortable spending time developing community relationships. The right trainers will will be comfortable out bush and see through difficult living conditions and environments and will see beauty in the people and the countryside. They will keep projects simple but built on a solid base by doing things properly. By doing it right the project will become a priority locally.

Employing Aboriginal trainers will really help with achieving these aims. You still need the 'right' Aboriginal person – not just anyone as a token gesture. The right Aboriginal staff will establish an instant connection with Aboriginal people on their land and much more quickly and effectively engage them. This is because of their shared history and the fact that they have grown up into their own Aboriginality.

Aboriginal staff are much more likely to get to know the local personalities and conditions and be told what's happening around the place. They will also find it easier to work out who the right Aboriginal people are and who can speak for country. They will form relationships with local people who have been living there long term rather than the transient 'whitefella' staff who non Aboriginal staff may easily bond with! This makes their work more effective as they will know if something else is happening that will get in the way of the project – or possibly be able to bring in other useful resources around the place to the project and make it more effective.

Supporting trainers

It is essential to provide good support to your Aboriginal trainers and to properly respect their experience and qualifications. Mentoring Aboriginal staff is important and professional development is an area where support is essential.

Cross cultural considerations

The target audience for the learning guides is remotely based Aboriginal people. There are many cross cultural protocols trainers should be aware of when delivering training to this audience.

We recommend that appropriate cross cultural training be undertaken by any trainers who do not already have extensive experience in this area. Look up what cross cultural programs are available in your area.

References

Personal communication with past and present ALEP staff.

Agri-Foods Industry Skills Council Indigenous Pathfinder 2008. *Weed Management Pre-Vocational Skill Set: guidebook and toolkit.* Agri-food Industry Skills Council (www.agrifoodskills.net.au/publications/weed-management-pre-vocational-skill-set)
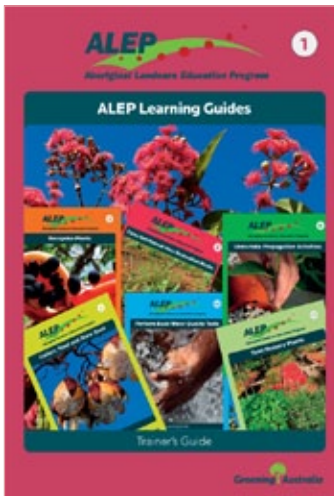
1. ALEP LEARNING GUIDES - TRAINER'S GUIDE

Structure of this Trainer's Guide

The remainder of this Trainer's Guide is dedicated to summarising each of the ALEP learning guides.

The layout on the opposite page describes the information presented for each guide. The main aim of the Trainer's Guide is to assist in making links to the nationally endorsed material.

Links to nationally endorsed material

Unit of competency: Each guide is linked to a unit of competency from a Certificate 2 training package.

Element: Within the guide each section (1, 2, 3 etc) is linked to an element within that unit of competency.

Performance criteria: We have not attempted to match our subheadings to the individual performance criteria within each element (hence our sub numbering of 1A, 1B etc instead of 1.1, 1.2 etc). However we have attempted to ensure that the material included covers all performance criteria. We have also attempted to ensure that if a student has undertaken all the activities and assignments, and practiced the work in the field over a period of time, they will be ready to be assessed for the unit of competency.

To keep the guides simple we have not tried to duplicate lesson plans and assessment tools that a Registered Training Organisation will need to undertake formal training. Rather we have tried to make user friendly, colourful training tools that will assist trainers whether they are doing formal or informal training.

NOTE

If a student undertakes all the activities and assignments within the learning guide for a particular unit of competency, and practices over a period of time, they should be ready to be assessed.

X.   LEARNING GUIDE NUMBER AND HEADING

The number is the number of the learning guide in the ALEP learning guide sequence.

The heading is the name of the learning guide (and the related unit of competency).

(NOMINAL TEACHING HOURS)

Nominal teaching hours are given for reference, it is expected that the student will spend considerably longer practicing their skills before being assessed.

X. NUMBERED SECTION HEADING

These relate to the sections within the learning guide (each section is linked to an element in the unit of competency).

Performance criteria

1.1   etc.

This is a list of the performance criteria for the element within the unit of competency that is linked to this section of the learning guide. This is nationally endorsed information and the numbering matches the endorsed national literature. Trainer's need to ensure their assessment tools cover all criteria.

Activities

1p3   Checklists (1.2) etc.

This is a list of all the activities in this section of the learning guide.

Assignment

1p6   A1 Project risk assessment (1.1, 1.2) etc.

This is the assignment for this section of the learning guide.

NOTE

Under Activities and Assignments the numbering in the left hand column refers where to find that component within the learning guide – eg. 1p4 refers to section 1, page 4.

The numbers in brackets at the end of each activity or assignment refer to the relevant performance criteria from the unit of competency.

Not all sections have assignments and/or activities but all performance criteria should be covered by the assignments and activities for that unit of competency.
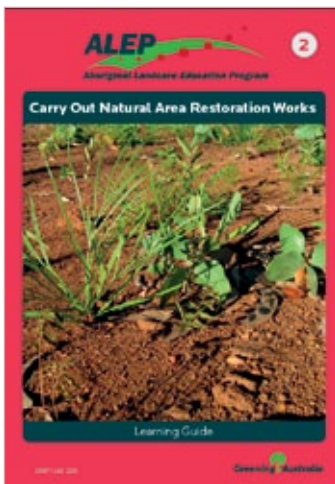
2. CARRY OUT NATURAL AREA RESTORATION WORKS
(40 NOMINAL TEACHING HOURS)

1. GETTING PREPARED

Performance criteria

1.1 Services are located using site and natural area restoration plans and in consultation with the supervisor.

1.2 OHS hazards are identified and safety concerns reported to the supervisor.

1.3 The environmental implications of natural area restoration works are identified and the likely outcomes assessed and reported to the supervisor.

1.4 Natural area restoration tools, equipment and machinery are selected and prepared for use according to enterprise work procedures and native plant species to be established.

1.5 Pre-operational and safety checks are carried out on tools, equipment and machinery according to manufacturers specifications and enterprise work procedures.

1.6 Personal protective equipment (PPE) is used and maintained according to procedures.

Activities

1p4 Safety checklist (1.1, 1.2, 1.5, 1.6, 4.6, 5.5)

1p5 Start project diary and talk to traditional owners

1p6 Talk about negative environmental impacts and record in project diary (1.3)

1p7 Tools and equipment list (1.4, 1.5)

Assignment

1p8 A1 Project Risk Assessment (1.1, 1.2, 1.5, 1.6, 4.6, 5.5)

2. TREATING WEEDS

Performance criteria

2.1 Species and quantities of weeds requiring control are identified according to enterprise work procedures.

2.2 Herbicides are prepared, where necessary, according to manufacturer's specifications and enterprise work procedures.

2.3   Weed control measures are undertaken according to the weed and non-target species physiological characteristics, and enterprise work procedures.

2.4   Work practices and control measures employed cause damage only to the target weed species.

Activities

2p9   Determine weeds present and treatment needed (2.1)

3. PREPARING SOIL

Performance criteria

3.1   Soil treatments are selected according to the soil condition, species requirements and enterprise work procedures.

3.2   Intact natural soil profiles are protected from damage.

3.3   Soil treatments are applied either broadly or at specific restoration sites according to enterprise work procedures.
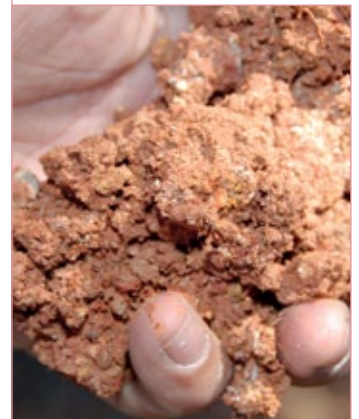
Assignment

3p12   A2 Plan Revegetation (1.1, 1.3, 1.4, 2.1, 3.1, 4.1)

4. REVEGETATION

Performance criteria

4.1   Vegetation replacement methods are determined and assisted natural regeneration, planting, seeding or transplanting treatments are prepared according to the restoration plan and enterprise work procedures.

4.2   Assisted regeneration treatments are applied to remnant vegetation and intact soil profiles where required according to enterprise work procedures.

4.3   Seed (and fertiliser if required) is sown either by hand in discrete areas or broadly using sowing and/or ripping trailed machinery.

4.4   Containerised plants or transplants are positioned according to the restoration plan and planted firmly ensuring good contact between roots and surrounding soil according to enterprise work procedures.

4.5   Hand watering or irrigation, where specified, is undertaken to establish newly sown or planted vegetation.

4.6   The natural area restoration works are undertaken according to OHS requirements.

5. FINISHING UP

Performance criteria

5.1   Plant guards and/or fencing are installed and maintained according to the natural area restoration plan and enterprise work procedures.

5.2   Multiple follow up weed control treatments are undertaken, as necessary, according to enterprise work procedures.

5.3   Waste material is removed from the natural area restoration site and disposed of in an environmentally aware and safe manner according to enterprise work procedures.

5.4   Tools, equipment and machinery are cleaned, maintained and stored according to enterprise work procedures.

5.5   A clean and safe area is maintained throughout and upon completion of work according to enterprise work procedures.

5.6. Work outcomes are recorded or reported to the supervisor according to enterprise work procedures.

Assignment

5p17   A3 Carry Out Revegetation (1.1, 1.2, 1.4, 1.5, 1.6, 2.2, 2.3, 2.4, 3.2, 3.3, 4.1, 4.2, 4.3, 4.4, 4.5, 4.6, 5.1, 5.2, 5.3, 5.4, 5.5, 5.6)

RECOGNISING PLANTS

3. RECOGNISE PLANTS

(40 NOMINAL TEACHING HOURS)

1. GETTING PREPARED

Performance criteria

1.1   Range of plants requiring recognition is identified.

1.2   Resources and equipment for use in recognition activity are prepared.

1.3   Available processes for plant recognition are identified, selected and prepared for use.

Activities

1p3   Safety and equipment checklists (1.2)

1p4   Find out who you need to get permission from to collect plants in these areas

1p4   In a group talk about why you might need to be able to recognise plants in your area (1.1)

Assignment

1p5   A1 Project Risk Assessment (1.2)
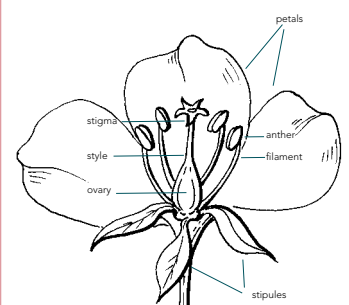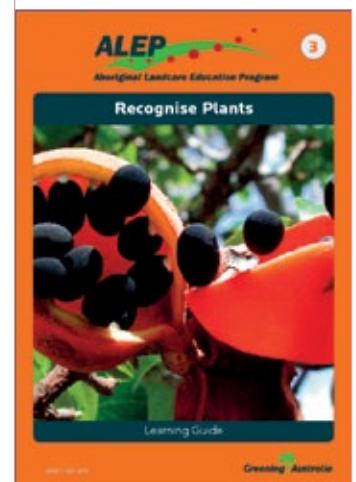
2. RECOGNISING PLANTS

Performance criteria

2.1   Visual inspection and research processes of enterprise plants are undertaken.

2.2   Specified plants are recognised according to their identifiable characteristics and named.

2.3   Brief descriptions of plant habits, characteristics and significant features are recorded.

2.4   Advice is sought when necessary and where appropriate in the recognition activity.

Activities

2p7   Try making up a rhyme or pattern of letters or words (1.3)

2p8   Find sketch and name division examples (1.3, 2.1)

Assignment

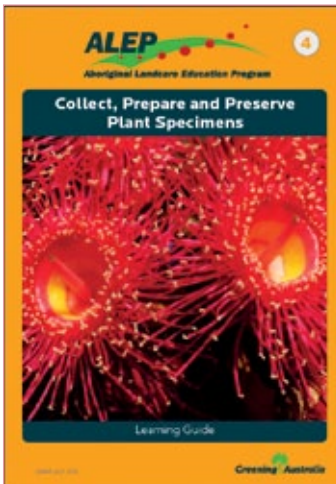2p17   A2 Plant Information Sheet (1.1, 1.2. 1.3, 2.1, 2.2, 2.3, 2.4)

3. PRESSING AND STORING PLANTS

Performance criteria

3.1   Information about plants is documented and added to the reference collection.

3.2   Reference collection is updated as new plants are recognised.

Assignment

3p23   A3 Plant Collection (Herbarium) (1.1, 1.2. 1.3, 2.1, 2.2, 2.3, 2.4, 3.1, 3.2)

4.   COLLECT, PREPARE AND PRESERVE PLANT SPECIMENS

(30 NOMINAL TEACHING HOURS)

1. COLLECTING PLANTS

Performance criteria

1.1   Sample collected is the largest practical to fit on herbarium sheet.

1.2   Sample includes features required for positive identification, e.g., flowers and fruit, leaves and roots.

1.3   Particular features are collected following enterprise procedures or guidelines.

1.4   Observations regarding locality, habit of plant, etc., are recorded following enterprise procedure.

1.5   Individual specimens are clearly identified in a manner that allows them to be linked to observations.

Activities

1p3   Safety checklist

1p4   Group decides what to collect (1.3)

1p5   Collect flowers and fruits from plants (1.1, 1.2, 1.3, 1.4. 1.5, 2.1)

Assignment

1p6   A1 Project Risk Assessment

2. PRESSING AND MOUNTING

Performance criteria

2.1   Samples are protected from wilting until pressing following enterprise procedures.

2.2   Specimens are arranged on sheets following enterprise guidelines for pressing.

2.3   Specimens are pressed correctly following established guidelines.

2.4   Archival specimens are attached to suitable material with observations attached following established material.

2.5   Specimens to be submitted for identification are packed following established procedures, including all data from collection observations as required by herbarium.

Activities

2p7   Making a plant press (2.2, 2.3)

Assignment

2p10   A2 Plant Collection Sheets (2.2, 2.3, 2.4)

3. LABELLING AND STORING

Performance criteria

3.1   All data relating to specimens is recorded and catalogued correctly following enterprise procedures.

Activities

3p12   Make labels (1.4)

Assignment

3p15   A3 Plant Collection (Herbarium) (2.2, 2.3, 2.4, 2.5, 3.1)

5.   COLLECT, TREAT AND STORE SEED
(20 NOMINAL TEACHING HOURS)

1. GETTING PREPARED

Performance criteria

1.1   Organisational occupational health and safety procedures, practices, policies, and precautions are observed and followed.

1.2   Seed collecting equipment is sourced and transported to seed collecting site.

1.3   Seed that is to be collected is identified from maps, diagrams or instructions.

Activities

1p3   Safety checklist (1.1, 2.1, 3.1)

1p4   Permission table (2.2)

1p5   Flower to seed drawing

1p6   Equipment checklist (1.2)

Assignment

1p7   A1 Project Risk Assessment (1.1, 2.1, 3.1)

2. COLLECTING SEED

Performance criteria

2.1   Organisational occupational health and safety procedures, practices, policies, and precautions are observed and followed.

2.2   Site environmental concerns are adhered to in accordance with relevant national, state, and local legislation and/or regulations.

2.3   Seed is collected using selected method in accordance with legislation, codes of practice, organisation requirements, conditions of permit and agreements with land holders, tenants and others.

2.4   As appropriate, health of parent plants is protected during seed collection.

2.5   Seed is placed in clean containers and labelled to codes of practice, organisation requirements and to maintain location and genetic identity.

Assignment

2p11   A2 Flowering and Fruiting Calendar (1.3)

3. CLEAN AND STORE SEED

Performance criteria

3.1 Organisation occupational health and safety procedures, practices, policies, and precautions are observed and followed.

3.2 Seeds are separated from other materials according to organisation requirements using available separation methods.

3.3 Cleaned seed is weighed using the specified scales and stored in accordance with organisational procedures and requirements of the species.

3.4 Seeds are treated in accordance with organisation requirements.

3.5 Seed weight, place of origin, species, and container identifier are recorded in accordance with organisational procedures.

3.6 Seeds are packaged for storage according to legislative and organisation requirements, codes of practice and client requirements to protect the seeds and to maintain traceability to collection source.

Activities

3p16   Seed treatment

Assignment

3p17   A3 Collect Seed (1.2, 2.2, 2.3, 2.4, 2.5, 3.2, 3.3. 3.4, 3.5, 3.6)

6.   MAINTAIN PROPERTIES AND STRUCTURES

(30 NOMINAL TEACHING HOURS)

1. GETTING PREPARED

Performance criteria

1.1 Visual inspections are conducted of structures and facilities to locate and evaluate defects, deterioration and impending defects.

1.2 Property infrastructure and resources are checked for correct operation, minor maintenance needs and damage.

1.3 Maintenance plan is confirmed according to supervisor's instructions and enterprise requirements.

Activities

1p4   Safety checklist (2.3, 3.1)

Assignment

1p5   A1 Project Risk Assessment (2.3, 3.1)
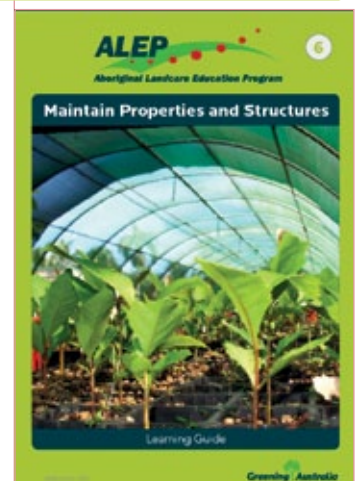
2. TOOLS, EQUIPMENT AND MATERIALS

Performance criteria

2.1 Tools, equipment and materials appropriate to the job requirements are selected and checked for serviceability according to manufacturer's specifications.

2.2 Faulty or unsafe tools are identified and segregated for repair or replacement and reported according to enterprise requirements.

2.3 Existing and potential hazards to health and safety are identified, assessed and reported according to OHS and enterprise requirements.

Assignment

2p8 A2 Tools (2.1)

3. BUILDING AND MAINTAINING A NURSERY

Performance criteria

3.1 Suitable personal protective equipment is selected, used, maintained and stored according to OHS requirements.

3.2 Routine maintenance to structures and surroundings is carried out according to the maintenance plan and enterprise requirements.

3.3 Minor repairs to building cladding, and treatments to structural finishes, are carried out as required to minimise deterioration.

Activities

3p10 Calculate the volume of concrete (3.2)

3p10 Correct use of shovel (3.2)

3p16 Maintenance plan (1.3)

3p16 Maintenance schedule (1.1, 1.2, 2.1, 2.2, 4.3)

4. FINISHING UP

Performance criteria

4.1 Worksite, tools and materials are cleaned, returned to operating order, and stored according to OHS and enterprise requirements.

4.2 Unwanted materials and waste from maintenance activities is collected, treated and disposed or recycled according to enterprise, OHS and environmental requirements.

4.3 Relevant information is documented according to industry, enterprise requirements and OHS requirements.

Assignment

4p20 A3 Build a Seedling Shadehouse (2.1, 2.2, 3.2, 3.3, 4.1, 4.2)

7. INSTALL MICRO-IRRIGATION SYSTEMS

(30 NOMINAL TEACHING HOURS)

1. GETTING PREPARED

Performance criteria

1.1   Materials, tools, equipment and machinery are selected according to irrigation design requirements and supervisors instructions.

1.2   The site for installation of the micro-irrigation system is identified according to enterprise plans and work procedures.

1.3   Parts and equipment delivered to the site are checked according to system drawings and specifications.

1.4   Water supply is checked to ensure that it is compatible with system specifications.

Activities

1p3   Safety checklist (2.2, 2.3, 2.4, 2.5, 3.3)

1p8   Tools needed checklist (1.1, 3.4)

Assignment

1p9   A1 Project Risk Assessment (2.2, 2.3, 2.4, 2.5, 3.3)

2. DESIGNING A MICRO-IRRIGATION SYSTEM

Performance criteria

2.1   Measurement and marking out of irrigation lines is undertaken as directed by supervisor.

2.2   Equipment operation and work practices conform with enterprise and legislative OHS requirements.

2.3   Pre-operational and safety checks are carried out on tools, equipment and machinery according to manufacturer's specifications and enterprise work procedures.

2.4   OHS hazards are identified, risks assessed and risk controls are implemented.

2.5   Personal protective equipment (PPE) is selected, used and maintained according to procedures

Assignment

2p11   A2 Irrigation Plan (1.2, 1.3, 1.4, 2.1)
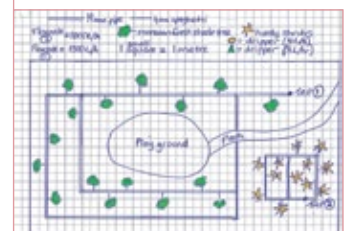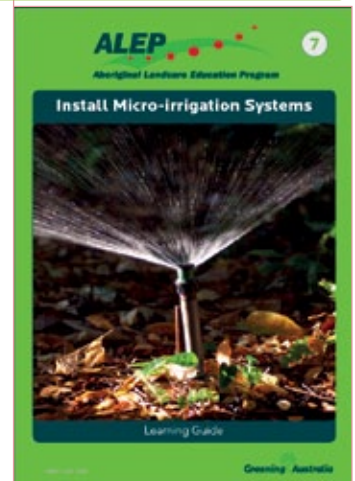
3. INSTALLING IRRIGATION

Performance criteria

3.1   Work is undertaken according to plan and supervisor's instructions.

3.2   Components are assembled and connected according to plan, with joints completed and tested.

3.3   A clean and safe work area is maintained while installation work is carried out.

3.4   Tools are chosen appropriate to the task being undertaken, and used according to guidelines and safe working practices.

Activities

3p12   Practice correct lifting and turning with spade (2.2)

3p13   Practice joining main pipes using hot water (3.2)

4. FINISHING AND MAINTAINING THE SYSTEM

Performance criteria

4.1   Earthworks are finished off to plan specifications and enterprise work procedures.

4.2   The site is restored and waste material is removed from the site and disposed of in an environmentally aware and safe manner according to enterprise work procedures.

4.3   Tools, equipment and machinery are cleaned, maintained and stored according to enterprise work procedures.

4.4   System is flushed and commissioned as directed.

4.5   Operating faults are identified and reported to supervisor and/or corrective actions taken.

Activities

4p15   Working on an existing system, practice flushing it (4.4)

Assignment

4p16   A3 Install and Check Irrigation (1.1, 1.3, 1.4, 2.1, 2.3, 2.4, 2.5, 3.1, 3.2, 3.4, 4.1. 4.2, 4.3, 4.4, 4.5)

8. UNDERTAKE PROPAGATION ACTIVITIES
(30 NOMINAL TEACHING HOURS)

1. GETTING PREPARED

Performance criteria

1.1 Workplace information is interpreted and clarified according to instructions.

1.2 OHS hazards in the work area are identified, rectified and/or reported.

1.3 Suitable personal protective equipment (PPE) is selected, used, maintained and stored.

1.4 Tools and equipment appropriate to the task being undertaken are selected and prepared according to written guidelines.

1.5 Propagation material is collected using the appropriate method for the species.

1.6 Propagation material is maintained and stored to ensure maximum viability.

Activities

1p4 Safety checklist (1.1,1.2, 1.3, 2.7)

1p5 Tools and supplies checklist (1.4)

1p6 Nursery hygiene check

Assignment

1p8 A1 Project Risk Assessment (1.1, 1.2, 1.3, 2.7)

2. PROPAGATE PLANTS

Performance criteria

2.1 Pre-treatment is applied and/or carried out appropriate to the propagation method and species.

2.2 Propagation techniques are carried out according to the requirements of the species.

2.3 Propagation material is handled in a way that minimises damage and maximises viability.

2.4 Water and nutrients are applied to suit the media conditions, plant requirements and propagation techniques employed.

2.5 Labels are applied according to enterprise guidelines.

2.6 Plant health is monitored and remedial action is taken according to written guidelines.

2.7 Propagation activities are carried out according to OHS requirements.

Activities

2p15 Division activity (1.4, 2.2, 2.3, 2.4, 3.2)

Assignment

2p17 A2 Cuttings (1.1, 1.4, 1.5, 1.6, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 3.1, 3.2, 3.3)

3. FINISHING UP

Performance criteria

3.1 Records are completed accurately and at the required time according to written guidelines.

3.2 Tools and equipment are cleaned and stored according to manufacturer specifications.

3.3 Waste is removed and hygiene practices are followed according to enterprise and OHS requirements.

Activities

3p19 Waste disposal activity (3.3)

Assignment

3p20 A3 Propagate by Seed (1.1, 1.4, 1.5, 1.6, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 3.1, 3.2, 3.3)

9. POT UP PLANTS

(20 NOMINAL TEACHING HOURS)

1. GETTING PREPARED

Performance criteria

1.1   Workplace information is interpreted and clarified according to instructions.

1.2   OHS hazards are identified and reported to the supervisor.

1.3   Tools and equipment for potting up are selected and used according to documented guidelines.

1.4   Work area is cleaned and disinfected according to company hygiene practices.

1.5   Materials are collected and checked to ensure sufficient quantity and quality for potting up operations.

Activities

1p3   Safety checklist (1.2, 2.1, 3.5)

1p5   Tools and supplies (1.1, 1.3)

1p6   Hygiene checklist (1.4)

Assignment

1p7   A1 Project Risk Assessment (1.2, 2.1, 3.5)
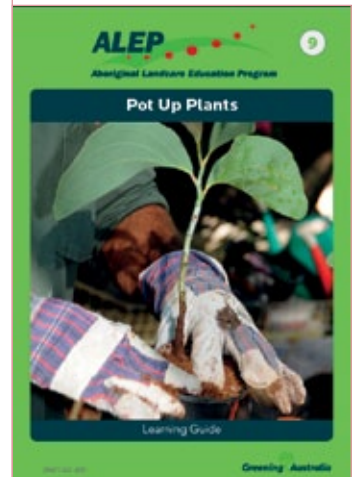
2. POTTING MIXES

Performance criteria

2.1   Suitable personal protective equipment (PPE) is selected, used and maintained.

2.2   Media components are measured and mixed according to documented guidelines.

2.3   Growing media is tested to ensure the product complies with media specifications.

Activities

2p9   Make up potting mix (2.3, 2.3)

3. POTTING UP

Performance criteria

3.1   Plants are prepared for potting in accordance with enterprise guidelines.

3.2   Plants are graded during the potting process according to quality specifications.

3.3   Media level in pots is adjusted to produce a well-furnished plant according to documented guidelines.

3.4   Placement and depth of plants comply with the planting method and plan.

3.5   Potting operations are carried out according to written OHS requirements.

Assignment

3p13   A2 Plants Ready to Pot Up (1.1, 1.5, 3.1)

4. FINISHING UP

Performance criteria

4.1   Plants are watered in to eliminate air pockets and prevent dehydration.

4.2   Cleaning procedures are performed and hygiene practices followed according to enterprise guidelines.

4.3   Waste is collected and disposed of or recycled to minimise damage to the external environment.

4.4   Records of potting up operations are maintained in the appropriate format.

Activities

4p14   Recording activity (4.4)

Assignment

4p16   A3 Pot Up Plants (1.1, 1.2, 1.4, 1.5, 2.2, 2.3, 3.1, 3.2, 3.3, 3.4, 3.5, 4.1. 4.2, 4.3, 4.4)

10. TEND NURSERY PLANTS

(30 NOMINAL TEACHING HOURS)

1. GETTING PREPARED

Performance criteria

1.1 OHS hazards in the nursery environment are identified, risks assessed and reported to the supervisor.

1.2. Plant growth and health requirements are clarified with the supervisor.

1.3. Irrigation system components are serviced for basic operational use and basic user serviceable parts are repaired or replaced.

1.4. Performance of the irrigation system is checked to ensure optimum results.

1.5. Temperature controls are monitored to ensure specified levels are maintained.

1.6. Hygiene practices are followed to minimise risk of contamination.

Activities

1p4 Safety checklist (1.1, 1.6, 2.1, 2.6)

1p5 Tools and supplies checklist (2.3)

Assignment

1p8 A1 Project Risk Assessment (1.1, 1.6, 2.1, 2.6)

2. TENDING NURSERY PLANTS

Performance criteria

2.1 Suitable personal protective equipment (PPE) is selected, used and maintained.

2.2 Common problems in nursery plants are recognised, and rectified and/or reported to the supervisor.

2.3 Tools and equipment are selected and used for plant maintenance.

2.4 Treatments are applied to assist plant growth as directed by the supervisor.

2.5 Water is applied in the quantity and method specified.

2.6 Nursery operations are undertaken according to OHS requirements.

2.7 Plant quality is maintained.
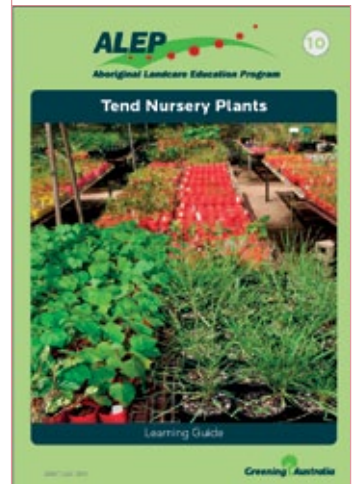
Activities

2p12   Nutrient deficiency activity (1.2, 2.2, 2.4, 2.7)

2p13   Weed check (2.2, 2.7)

Assignment

2p15   A2 Irrigation Check (1.3, 1.4, 2.5, 2.7)

3. FINISHING UP

Performance criteria

3.1   Workplace information is recorded in the appropriate format.

3.2   Waste is collected and disposed of or recycled.

3.3.   Tools and equipment are cleaned and stored.

Activities

3p18   Waste disposal activity (3.2)

Assignment

3p19   A3 Maintenance Schedule (1.2, 1.3, 1.4, 1.5, 1.6, 2.2, 2.3, 2.4, 2.5, 2.7, 3.1, 3.2, 3.3)

11. TREAT WEEDS

(40 NOMINAL TEACHING HOURS)

1. GETTING PREPARED

Performance criteria

1.1   Weeds which impact on commercial crops, gardens and turf, and natural areas are recognised by common name.

1.2   Details of the weed occurrence are recorded and reported to the supervisor.

1.3   Treatment methods are selected in consultation with the supervisor.

1.4   Equipment is selected and prepared for use according to enterprise guidelines and manufacturers specifications.

1.5   Occupational Health and Safety hazards are identified and safety concerns reported to the supervisor.

Activities

1p5   Safety checklist (1.5, 2.1, 2.4)

1p7   Discuss weeds in your area and whether everyone considers them weeds or not (1.1)

1p11   Identify 10 weeds (1.1, 1.2)

1p12   Tools and equipment activity (1.4)
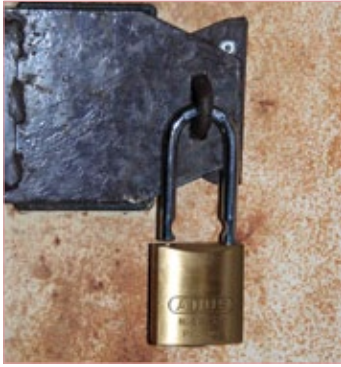
Assignment

1p13   A1 Project Risk Assessment (1.5, 2.1, 2.4)

2. TREATING WEEDS

Performance criteria

2.1   Personal protective equipment (PPE) is used and maintained according to procedures.

2.2   Treatments are prepared according to supervisor's instructions and manufacturer's guidelines.

2.3   Treatments are applied in such a way that non-target damage is minimised.

2.4   Treatments are applied according to OHS and environmental regulatory requirements.

Activities

2p22   Decide on weed treatment in a table (1.3)

Assignment

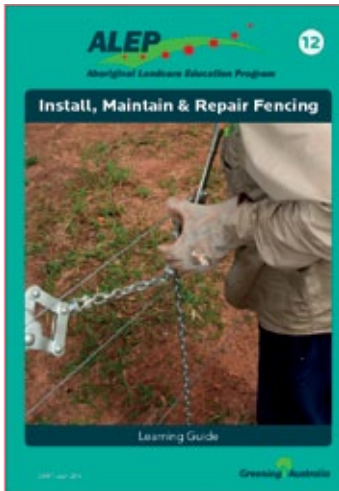2p23   A2 Treat Weeds Using Chemicals (1.3, 1.4, 1.5, 2.1, 2.2, 2.3, 2.4, 3.1, 3.2)

3. FINISHING UP

Performance criteria

3.1   Equipment is shut down and cleaned with full consideration of environmental impacts and OHS requirements.

3.2   Treatment waste is disposed of causing minimal environmental damage.

Assignment

3p28   A3 Record and Monitor Weed treatment (2.4, 3.1, 3.2)

12.   INSTALL, MAINTAIN AND REPAIR FENCING

(30 NOMINAL TEACHING HOURS)

1. GETTING PREPARED

Performance criteria

1.1   Appropriate tools and materials are selected in accordance with task requirements, manufacturer's guidelines and fence design.

1.2   Faulty or unsafe tools are identified and put aside for repair or replacement.

1.3   OHS hazards are identified and safety concerns reported to the supervisor.

1.4   Transport of fencing materials, tools and equipment to worksite is arranged.

Activities

1p4   Safety checklist (1.1, 1.3, 2.1)

1p7   Draw a map of fence (2.2)

1p8   Tools and equipment checklist (1.1, 1.2)

1p10   Materials checklist (1.1)

Assignment

1p11   A1 Project Risk Assessment (1.3, 2.1)

2. BUILDING A FENCE

Performance criteria

2.1 Personal protective equipment (PPE) is used and maintained according to procedures.

2.2 Posts and stays are installed and secured in accordance with industry practice.

2.3 Wire is strung and tensioned in accordance with manufacturer's guidelines and industry practice.

2.4 Wire netting or other fencing materials are attached in accordance with manufacturer's guidelines and industry practice.

2.5 Gates are positioned and attached and checked for correct operation.

Activities

2p13 Safe digging activity (1.3, 2.2)

Assignment

2p20 A2 Build a fence (1.1, 1.3, 1.4, 2.1, 2.2, 2.3, 2.4, 2.5, 4.1, 4.2, 4.3)

3. MAINTAINING AND REPAIRING FENCES

Performance criteria

3.1 Faults or structural damage are identified and necessary repairs are carried out in accordance with industry practice and manufacturer's guidelines.

3.2 Dismantling operations are carried out recovering re- useable materials.

3.3 Further maintenance or repair works are identified and reported.

3.4 Used fencing material is packed for reuse or disposed of according to enterprise procedures.

4. FINISHING UP

Performance criteria

4.1 Work area is cleared and tidied and all non re-useable materials are disposed of in an environmentally responsible manner.

4.2 Tools, personal protective equipment and re-useable materials are cleaned and stored.

4.3 Work activities are recorded in accordance with industry practice.

Assignment

4p23 A3 Inspect and Repair a Fence (1.1, 1.3, 3.1, 3.2, 3.3, 3.4, 4.1, 4.2, 4.3)
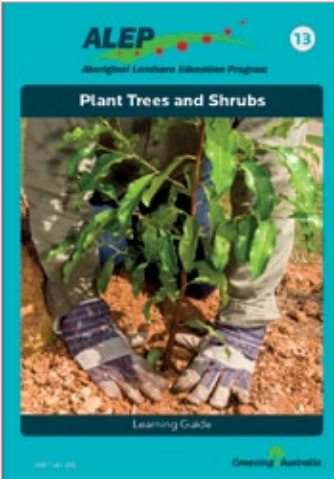
13. PLANT TREES AND SHRUBS
(20 NOMINAL TEACHING HOURS)

1. GETTING PREPARED

Performance criteria

1.1   OHS hazards are identified and reported to the supervisor.

1.2   Personal protective equipment (PPE) is used and maintained according to procedures.

1.3   Tools and equipment for planting are used according to directions.

1.4   Site is marked out according to planting plan and according to directions.

1.5   Competing plants are controlled.

1.6   Soil is modified according to directions.

Activities

1p3   Safety checklist (1.1, 1.2)

1p4   Draw plant and list its needs

1p5   Tools and supplies checklist (1.3)

Assignment

1p8   A1 Project Risk Assessment (1.1, 1.2)

2. DIGGING HOLES

Performance criteria

2.1   Planting holes are excavated according to the needs of the plant.

2.2   Trees and shrubs are watered prior to planting.

2.3   Root ball is verified to be damp.

2.4   Trees and shrubs are removed from containers.

Activities

2p9   Practice safe digging (1.1, 1.2, 1.3, 2.1)

Assignment

2p10   A2 Planting Plan (1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 2.1)

3. INSPECT AND PREPARE THE PLANTS

Performance criteria

3.1   Plant and root ball are inspected

3.2   Dry, water repellent and loose root balls are reported to the supervisor.

3.3   Presence of symptoms of pests or disease is reported to the supervisor.

3.4   Root treatments are applied according to directions.

Activities

3p11   Check plants and discuss problems (2.3, 3.1, 3.2, 3.3, 3.4)
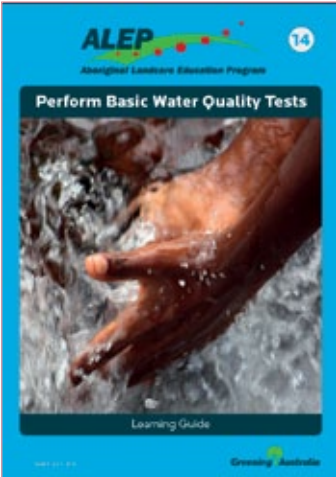
4. PLANTING AND FINISHING UP

Performance criteria

4.1   Plants are placed in hole.

4.2   Planting hole is back-filled and soil consolidated.

4.3   Plants are watered in where required to eliminate air pockets.

4.4   Apply mulch as directed.

Assignment

4p20   A3 Carry Out Planting (1.1, 1.2, 1.3, 2.2, 2.3, 2.4, 3.1, 3.2, 3.3, 3.4, 4.1, 4.2, 4.3, 4.4)

14. PERFORM BASIC WATER QUALITY TESTS
(20 NOMINAL TEACHING HOURS)

1. GETTING PREPARED

Performance criteria

1.1 Instructions for conducting and recording routine water tests are received and confirmed with appropriate personnel.

1.2 Testing procedures and techniques are confirmed.

1.3 Personal protective equipment specified for routine water tests is selected, fitted correctly and used.

1.4 Testing equipment is prepared and checked in accordance with organisational and statutory requirements.

Activities

1p3 Safety checklist (1.3, 2.3)

1p5 Equipment checklist (1.4)

Assignment

1p6 A1 Project Risk Assessment (1.3, 2.3)

2. TESTING WATER

Performance criteria

2.1 Routine water tests are conducted in accordance with standard industry methods, organisational and statutory requirements.

2.2 The integrity of the samples are maintained during testing.

2.3 Approved safety procedures are implemented to limit hazard or contamination to self, work area and environment.

Activities

2p7 Cultural values identified (1.1, 1.2, 2.1, 3.1)

2p10 Site information sheets (1.1, 1.2, 2.1, 3.1)

Assignment

2p22 A2 Testing Water Bugs (1.1, 1.2, 1.3, 1.4, 2.1, 2.2, 2.3, 3.1, 3.2, 3.3)

3. FINISHING UP

Performance criteria

3.1 All relevant information is recorded in accordance with organisational and statutory requirements.

3.2 Test equipment is cleaned and cared for in accordance with organisation procedures.

3.3 Work area is restored and maintained in accordance with organisational and statutory requirements.

Activities

3p23 Land management discussion

Assignment

3p24 A3 Testing Water Quality (1.1, 1.2, 1.3, 1.4, 2.1, 2.2, 2.3, 3.1, 3.2, 3.3)
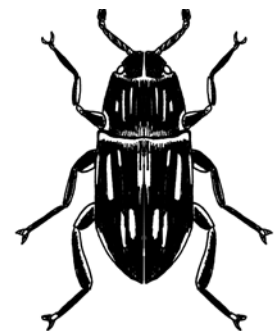
ALEP
Aboriginal Landcare Education Program

ALEP Learning Guides. These full colour, step-by-step guides provide practical, easy to follow instructions. Based in the Top End of the Northern Territory, they can also be adapted to other regions.

GETTING READY

1. **ALEP Learning Guides – Trainer's Guide**
2. Carry Out Natural Area Restoration Works

RECOGNISING PLANTS

3. Recognise Plants
4. Collect, Prepare and Preserve Plant Specimens

GROWING PLANTS

5. Collect, Treat and Store Seed
6. Maintain Properties and Structures
7. Install Micro-irrigation Systems
8. Undertake Propagation Activities
9. Pot Up Plants
10. Tend Nursery Plants

MANAGING COUNTRY

11. Treat Weeds
12. Install, Maintain and Repair Fencing
13. Plant Trees and Shrubs
14. Perform Basic Water Quality Tests

This *Trainer's Guide*:

- SETS THE SCENE FOR USING THE ALEP LEARNING GUIDES

- EXPLAINS THE STRUCTURE OF THE LEARNING GUIDES

- MAKES LINKS BETWEEN LEARNING GUIDES AND RELATED UNITS OF COMPETENCY

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