KETSO ACADEMY

Arboriculture I
Module 1: Introduction to arboriculture

A mobile-first practical course for beginner tree-care students in Sierra Leone

Course level	Beginner
Nominal module time	12.5 hours
Delivery	Self-paced online distance education
Certificate pathway	KETSO Academy Certificate of Completion

This is an original KETSO Academy module. It was written in new wording for learners in Sierra Leone. It does not reproduce or refer to any previous commercial course.

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How to use this module

This module is built for self-paced study. You can read on a smartphone, listen to an audio version, watch short videos, and complete practical tasks near your home, school, farm, workplace, or community.

- Read one unit at a time.
- Complete the quick check before moving on.
- Take your own photos for practical tasks.
- Write what you really observe. Do not invent information.
- Use the words “I do not know” when you are unsure.
- Read the safety box before every practical task.
- Upload your work through the KETSO Academy student page.

Important safety rule
This module teaches ground-level observation and basic planting. Do not climb trees. Do not use a chainsaw. Do not cut large branches. Do not work under hanging branches. Never work on a tree near an electricity line. Stop and report the danger to a trained person.

Module aim

To introduce arboriculture and help you make safe, practical decisions about selecting, planting, observing, and caring for young trees.

Module learning outcomes

- Explain what arboriculture is and how it is different from forestry.
- Describe important benefits and possible problems connected with trees.
- Study a planting site and choose a suitable type of tree.
- Recognise signs of a healthy or poor-quality young tree.
- Explain and demonstrate safe planting of a young tree.
- Plan early care, including watering, mulching, protection, and records.
- Carry out a basic ground-level tree observation.
- Recognise situations that need a trained tree professional.

Study plan

Part	Topic	Time	Evidence
Unit 1	What is arboriculture?	1 hour	Quick check
Unit 2	Why trees matter	1.25 hours	Photo observation
Unit 3	Right tree, right place	2 hours	Site assessment
Unit 4	Choosing a healthy young tree	1.5 hours	Plant-quality check
Unit 5	Planting a young tree	2 hours	Planting evidence or plan
Unit 6	Early care, records, and basic inspection	1.75 hours	Tree-care record
Assessment	Quiz and practical portfolio	3 hours	Uploads and answers

Assessment

You must complete the knowledge quiz and all four practical portfolio tasks. A score of 70% is required. Unsafe advice causes a Revise result even when the total score is above 70%.

What is arboriculture?

Estimated time: 1 hour	Module: Introduction to arboriculture

Learning goals

After this unit, you should be able to:

- define arboriculture in simple words;
- name common arboriculture tasks;
- explain the difference between arboriculture and forestry;
- identify tasks that a beginner must not do alone.

1.1 Meaning of arboriculture

Arboriculture is the care and management of individual trees and groups of trees where people live, work, travel, farm, and learn. It includes choosing trees, planting them, supporting healthy growth, checking for problems, pruning, protecting roots, and deciding when expert help is needed.

An arborist is a person with training and skill in tree care. Some arborists work mainly from the ground. Others are trained for climbing, chainsaw work, large-tree pruning, or tree-risk assessment. These advanced tasks need special training and equipment.

1.2 Arboriculture and forestry

	Arboriculture	Forestry
Main focus	Individual trees and small groups	Forests, woodlands, and large areas
Common places	Homes, streets, schools, farms, parks, work sites	Natural forests, plantations, protected areas
Typical work	Planting, inspection, pruning, tree protection	Forest planning, harvesting, conservation, restoration
Main question	How can this tree stay safe and healthy here?	How can this forest be managed over time?

1.3 Common arboriculture tasks

- choosing a tree for a purpose and place;
- checking soil, water, light, space, and nearby hazards;
- selecting healthy planting material;

- planting at the correct depth;
- watering and mulching;
- protecting trees from fire, animals, vehicles, tools, and construction;
- recording growth and problems;
- pruning small branches with correct tools and training;
- checking for dead branches, cracks, decay, root damage, or a new lean;
- requesting expert help when the work is dangerous or uncertain.

Beginner limit

A beginner can observe, record, water, mulch, protect, and help plant small trees. A beginner should not climb, use a chainsaw, remove large branches, fell trees, or make final decisions about a dangerous mature tree.

Activity 1: Tree-care work around you

Look around your community. Find three examples of tree-care work. They may be good or poor examples. For each example, write the place, the work done, and one effect on the tree.

Example	Place	What was done?	Effect on the tree

Quick check

1. In one sentence, what is arboriculture?

Your answer: _____

2. Name two tasks that a beginner can do safely.

Your answer: _____

3. Name two tasks that need specialist training.

Your answer: _____

Why trees matter

Estimated time: 1 hour 15 minutes	Module: Introduction to arboriculture

Learning goals

After this unit, you should be able to:

- describe at least six ways trees can help people and nature;
- explain why a tree can also create problems when it is badly chosen or poorly managed;
- connect tree benefits with local needs in Sierra Leone.

2.1 Trees provide many services

Trees can support cleaner air, shade, cooler places, rainfall management, carbon storage, wildlife, food, materials, beauty, and community well-being. The value of a tree usually increases as it survives and grows, but care costs and conflicts must also be considered. [1]

Tree service	Local meaning
Shade and cooling	Leaves block direct sun. Shade can make a house, schoolyard, market, or roadside more comfortable.
Water and soil protection	Roots hold soil. Tree crowns slow some rainfall. Leaf litter can protect the soil surface.
Food and products	Trees can provide fruit, nuts, medicines, fodder, fuelwood, fibres, poles, timber, oils, or spices.
Wildlife and biodiversity	Flowers, fruit, bark, leaves, and cavities can support insects, birds, and other animals.
Climate support	Trees take carbon dioxide from the air while they grow and store carbon in wood, roots, and soil.
Livelihoods	Tree nurseries, fruit production, processing, planting, maintenance, and wood products can create income.
Health and community	Green places can support rest, recreation, learning, identity, and community pride.
Wind and privacy	Groups of trees and shrubs can reduce wind, dust, glare, or unwanted views when placed well.

2.2 Trees can also create conflicts

A tree is not automatically good in every place. A large tree planted in a small space may damage a roof, block a road, conflict with power lines, or need repeated cutting. Some trees have weak branches, aggressive roots, poisonous parts, heavy fruit, sharp thorns, or high water needs. Good arboriculture tries to gain benefits while reducing future problems.

- branches near power lines or roofs;
- roots in drains, walls, paths, or small soil spaces;
- falling fruit or dead branches above busy areas;
- poor visibility at road junctions;
- species that spread into natural areas;
- trees that need more water than the site can provide;
- one species planted everywhere, allowing one pest or disease to affect many trees.

Local example

A mango tree may be valuable for food and shade. It may be unsuitable directly above a busy walkway because heavy fruit can fall. The question is not only “Is mango useful?” The question is “Is mango suitable for this exact place?”

Activity 2: One tree, many effects

Choose one real tree. Take one photo that shows the tree and the area around it. Record three benefits and two possible conflicts.

☐ Photo shows the whole tree and nearby buildings, roads, crops, wires, or people.

☐ Three benefits are linked to what you can observe.

☐ Two possible conflicts are realistic, not invented.

☐ You explain whether the tree is suitable for that place.

Quick check

1. Give four benefits of trees.

Your answer: _____

2. Why can a useful tree still be the wrong tree for a site?

Your answer: _____

3. Why is species diversity useful in a community planting programme?

Your answer: _____

Right tree, right place

Estimated time: 2 hours	Module: Introduction to arboriculture

Learning goals

After this unit, you should be able to:

- start with the purpose of planting;
- carry out a basic site assessment;
- match expected tree size and needs to available space and conditions;
- identify hazards that may make a site unsuitable.

3.1 Start with the purpose

Do not begin by asking, “Which tree do I like?” Begin by asking, “What do we need the tree to do?” A clear purpose helps you choose the right species, number of trees, spacing, and care plan.

- fruit or another useful product
- shade for people, animals, crops, or buildings
- soil protection on a slope
- wind protection
- roadside or street improvement
- school or community learning
- wildlife habitat
- boundary marking or privacy
- restoration of damaged land

3.2 Study the site

The planting site is as important as the plant. Check soil, drainage, water, sunlight, wind, space, and nearby structures before selecting a tree. Matching the tree to the site improves long-term survival and performance. [2]

Site factor	Questions to ask
Purpose	What must the tree provide? Who will use or care for it?
Space above ground	How much room is available for the mature crown? Are there wires, roofs, roads, or other trees?
Space below ground	Are there drains, foundations, compacted ground, rocks, or a very small planting pit?
Sunlight	Is the site sunny all day, partly shaded, or deeply

	shaded?
Soil	Is it sandy, clayey, stony, compacted, shallow, fertile, or low in organic matter?
Drainage	Does water stay for a long time after rain, or does the soil dry very quickly?
Water supply	Who will water the tree during dry periods? Is water reliable?
Fire and animals	Can bush fire, goats, cattle, rodents, or people damage the tree?
Access and use	Will vehicles, football, markets, construction, or foot traffic affect the tree?
Future care	Who will inspect, water, weed, protect, and record the tree for at least two years?

3.3 Think about mature size

A young tree can look small and harmless. The mature tree may be much taller and wider. Roots usually spread far beyond the trunk. Choose the tree for its expected mature size, not its current size.

Power lines
Do not plant a tree that will grow into overhead electricity lines. Do not touch or cut a tree that is already close to a power line. Tree work near live wires can cause death. Report the problem to the electricity authority or a qualified line-clearance professional.

3.4 Choose for resilience, not only fast growth

Fast growth can be useful, but it is not the only quality. Also consider expected life, branch strength, root behaviour, pests, water needs, usefulness, local knowledge, and whether planting material is available. Local or well-adapted trees often have advantages, but every species must still be matched to the site.

Activity 3: Basic site assessment

Choose one real place where a tree could be planted. Complete the table. Take four photos: the whole site, the ground, the sky above the site, and the nearest hazard or important feature.

Question	Your observation	What this means for tree choice
What is the main purpose?		

How much space is available?		
How much sun reaches the site?		
What is the soil like?		
Does water collect or drain quickly?		
Who can provide water in the dry season?		
What can damage the tree?		
What must be avoided?		
Which size of tree fits: small, medium, or large?		
Name two possible tree species or types.		

Quick check

1. What is the first question before choosing a tree?

Your answer: _____

2. Name five site factors.

Your answer: _____

3. Why must mature size be considered?

Your answer: _____

Choosing a healthy young tree

Estimated time: 1 hour 30 minutes	Module: Introduction to arboriculture

Learning goals

After this unit, you should be able to:

- check the leaves, stem, branches, root flare, root system, and container;
- recognise common signs of poor planting material;
- record uncertainty instead of guessing.

4.1 Healthy planting material gives the tree a better start

A suitable species can still fail when the seedling or young tree is weak, damaged, diseased, root-bound, dry, or badly shaped. Inspect the whole plant before accepting it.

4.2 Six-part quality check

Check	What to look for
Leaves	Most leaves should have a normal colour and size for that species. A few damaged leaves may be normal. Many spotted, wilted, yellow, eaten, or curled leaves need investigation.
Stem	The main stem should be alive, firm, and free from major wounds. Avoid trees with deep cuts, peeling caused by injury, or a stem that is loose in the root ball.
Branches	Branches should be alive and reasonably balanced. Avoid many broken branches or several competing main stems when one strong stem is expected.
Root flare	The base of the trunk should widen where major roots begin. It should not be buried deeply under soil or mulch.
Roots	Roots should be moist and alive. Avoid severe circling roots, rotten roots, or a small root system that cannot hold the soil together.
Container or root ball	The plant should not be falling out of the container,

	extremely root-bound, waterlogged, or completely dry.

The root flare is the place where the trunk widens into the main roots. It should remain visible. Circling roots can restrict water and nutrient movement and may weaken the tree later. [3]

4.3 Local origin and identity

Ask where the seed or cutting came from. Planting material from a climate and area similar to the planting site may perform better. Correct species identity also matters. A wrong label can create serious future problems.

4.4 Never hide uncertainty

You may not know the species or the cause of a symptom. Do not invent an answer. Write what you observe, take clear photos, and mark the item for further identification.

Activity 4: Young-tree quality check

Inspect one young tree or seedling. It may be in a nursery, garden, farm, school, or KETSO site. Do not pull it out of the soil. Take a whole-plant photo and close photos of the stem base and one possible problem.

Part	Good / Acceptable / Poor / Unknown	Evidence
Leaves		
Stem		
Branches		
Root flare		
Visible roots		
Container or soil condition		
Overall decision		

Do not reject a tree from one small sign
One yellow leaf does not prove disease. One insect does not prove a serious pest problem. Use several observations and compare with other trees of the same type.

Quick check

1. What is the root flare?

Your answer: _____

2. Why are severe circling roots a concern?

Your answer: _____

3. What should you write when you cannot identify a tree or symptom?

Your answer: _____

Planting a young tree

Estimated time: 2 hours	Module: Introduction to arboriculture

Learning goals

After this unit, you should be able to:

- prepare the site and tree before planting;
- place the root flare at the correct level;
- backfill, water, mulch, and protect the tree safely;
- avoid common planting mistakes.

5.1 Before planting

☐ Confirm permission to plant.

☐ Confirm the tree is suitable for the site.

☐ Check for underground and overhead hazards.

☐ Arrange water and aftercare before digging.

☐ Keep roots moist and shaded before planting.

☐ Collect tools, water, mulch, and protection materials.

☐ Plan safe lifting. Ask for help with a heavy tree.

5.2 Planting steps

Good planting practice uses a broad hole, places the root flare at or slightly above the surrounding ground, and avoids burying the trunk. The exact method changes with container-grown, bare-root, or soil-ball planting material. [4]

Step	Action
1. Find the root flare	Remove loose soil from the top of the root ball until the first main roots can be seen. The flare, not the top of the container soil, controls planting depth.
2. Measure the root system	Measure from the root flare to the bottom of the root ball or main roots.
3. Dig a broad, shallow hole	Make the hole wider than the root system but no deeper than the measured root depth. A broad hole helps roots grow into the surrounding soil.

4. Remove the container	Handle the tree by the root ball, not by pulling the trunk. Remove plastic, bags, strings, and other material that can restrict roots.
5. Check the roots	Loosen or correct small circling roots where this can be done without major damage. A badly root-bound tree may need to be rejected or handled by an experienced person.
6. Set the tree upright	Place the root flare level with or slightly above the surrounding soil. Check the tree from two directions.
7. Backfill carefully	Return the soil in layers. Break large clods. Do not bury the trunk. Do not stamp heavily because this can compact the soil.
8. Water slowly	Water the root area to settle soil and remove large air spaces. Add soil where settling creates a hole.
9. Add mulch	Use an organic mulch where available. Keep it away from the trunk and root flare. Do not make a mulch volcano.
10. Protect and record	Add a guard only when there is a real threat from animals, fire, vehicles, or people. Record the date, species, site, and person responsible for care.

5.3 Staking

Many small trees do not need staking. Stake only when the root system cannot hold the tree upright, the site is very windy, or damage is likely. Use wide, flexible ties. Allow some movement. Check ties often and remove them when the tree can stand safely.

5.4 Common mistakes

- planting too deep;
- burying the trunk with soil or mulch;
- digging a narrow hole with hard sides;
- leaving plastic, wire, or tight string around the roots or stem;
- allowing roots to dry before planting;
- adding strong fertiliser directly against roots;
- staking too tightly or leaving ties for too long;
- planting without a person responsible for watering;
- placing a tree where it will conflict with wires, roads, buildings, drains, or crops.

Practical option

Students who have permission, a suitable site, water, and a healthy seedling may plant one tree. Students without these conditions must submit a planting demonstration using a container and loose soil, or create a full planting plan. Never plant only to complete an assignment.

Activity 5: Planting evidence or planting plan

- ☐ Photo before work shows the site and hazards.
- ☐ Photo shows the root flare before final backfilling.
- ☐ Photo after planting shows the whole tree and ground level.
- ☐ The student explains why the tree fits the site.
- ☐ The student names the person responsible for watering and protection.
- ☐ The student records one risk and how it will be controlled.

Quick check

1. Why is planting depth controlled by the root flare?

Your answer: _____

2. Why should the planting hole be broad?

Your answer: _____

3. When might a young tree need staking?

Your answer: _____

Unit 6

Early care, records, and basic inspection

Estimated time: 1 hour 45 minutes	Module: Introduction to arboriculture

Learning goals

After this unit, you should be able to:

- plan watering, weed control, mulching, protection, and follow-up;
- record changes in a young tree;
- carry out a basic ground-level observation;
- recognise urgent warning signs and professional limits.

6.1 Establishment takes time

Planting day is the start, not the end. A young tree needs time to grow roots into the surrounding soil. During this establishment period, water shortage, fire, animals, weeds, broken guards, and human damage can quickly cause failure.

6.2 Water according to need

Do not use one fixed watering rule for every tree. Soil type, rainfall, tree size, sun, wind, and drainage all change water need. Check the soil near the root area. It should be moist but not permanently waterlogged. Water slowly so it enters the soil instead of running away.

6.3 Mulch and weeds

Mulch can reduce water loss, moderate soil temperature, and reduce weed competition. Use clean organic material where appropriate. Keep mulch away from the trunk and do not cover the root flare. Remove strong weeds and grasses close to a young tree carefully without damaging bark or roots.

6.4 Protection

- Create and maintain a firebreak where bush fire is a risk.
- Use a tree guard where animals, vehicles, or people may cause damage.
- Make sure the guard does not rub against or trap the stem.
- Keep cutting tools, hoes, and machines away from the trunk.
- Do not attach nails, signs, wire, or rope tightly to a living tree.

6.5 Keep simple records

Records help a team learn what works. They also show whether the tree is alive, growing, damaged, or missing. Use the same tree identification number each time.

- tree ID and location
- species or local name, with Unknown allowed

- planting date
- person or group responsible
- height or another simple growth measure
- soil moisture
- leaf condition
- stem and branch condition
- guard, mulch, weeds, and fire risk
- action taken
- date of next check

Young-tree monitoring can include the whole-tree photo, bark damage, broken branches, soil moisture, weeds, mulch, and whether the root flare is buried. [5]

6.6 Basic ground-level tree observation

A beginner observation is not a professional tree-risk assessment. Its purpose is to notice visible changes, keep people away from obvious danger, and request help when needed.

Observation area	Questions
Site	Has digging, fire, flooding, construction, vehicle movement, or soil compaction changed the area?
Roots and base	Are roots cut, exposed, rotten, burned, or covered? Is the soil lifting or cracking near a new lean?
Stem	Is there fresh damage, a deep crack, a cavity, loose bark, fungus, or a large dead area?
Branches and crown	Are there broken, hanging, dead, or suddenly wilted branches?
Change	Is the tree leaning more than before? Did symptoms appear after a storm or other event?
Target	Could a falling branch or tree hit people, buildings, roads, vehicles, or power lines?

Urgent warning signs
Keep people away and report immediately when you see a hanging branch, a fresh major crack, a tree that has suddenly leaned, soil lifting beside the roots, a dead tree that can hit people or property, or any tree touching or close to electricity lines. Do not stand under the danger to take a better photo.

Visible defects such as dead or hanging branches, cracks, root damage, decay, weak unions, and a new lean can increase the chance of tree failure. A professional assessment considers both the defect and what could be hit. [6]

Activity 6: Four-week care record

Choose one young tree that you can observe safely. Complete one record now and plan three later checks. For the pilot course, you may submit the first record and your schedule. The KETSO website can remind you to upload later checks.

Date	Photo	Soil moisture	Leaves and stem	Protection	Action / next check

Quick check

1. Why is planting day only the start of tree care?

Your answer: _____

2. Name five items for a young-tree record.

Your answer: _____

3. Name three warning signs that need urgent reporting.

Your answer: _____

Module assessment

The assessment has two parts: a knowledge quiz and a practical portfolio. Complete both parts. The website may allow you to improve and resubmit work after feedback.

Part A: Knowledge quiz

Choose the best answer for each question.

1. What is arboriculture mainly about?

A. Caring for individual trees and small groups of trees
B. Selling only timber
C. Studying animals
D. Building roads

2. Which task is suitable for a beginner working alone?

A. Climbing a tall tree
B. Using a chainsaw
C. Recording leaf and stem condition from the ground
D. Cutting a branch above a power line

3. What should be decided first when choosing a tree?

A. The colour of the container
B. The purpose of the tree
C. The cheapest available species
D. The fastest-growing species

4. Which is a tree benefit?

A. Shade
B. Soil protection
C. Food
D. All of these

5. Why can a useful species be wrong for a site?

A. It may become too large or conflict with structures
B. Useful trees never cause problems
C. Only native trees need space
D. Small seedlings stay small

6. Which site factor should be checked?

A. Water supply
B. Mature tree space
C. Soil and drainage
D. All of these

7. What does mature size mean?

A. The size of the seed
B. The expected size of the grown tree
C. The size of the planting bag

D. The number of leaves today

8. What should you do near overhead electricity lines?

A. Cut branches quickly
B. Use a metal pole
C. Avoid the work and report it to a qualified person
D. Climb when the weather is dry

9. What is the root flare?

A. A leaf disease
B. The place where the trunk widens into the main roots
C. A type of fruit
D. A pruning tool

10. Which is a warning sign in young planting material?

A. Severe circling roots
B. A visible root flare
C. A firm living stem
D. Moist roots

11. What is the best response when you cannot identify a species?

A. Guess
B. Copy another student
C. Write Unknown and record clear evidence
D. Leave the whole task empty

12. How deep should the tree normally be planted?

A. With the root flare at or slightly above ground level
B. With half the trunk buried
C. As deep as possible
D. With roots above the soil

13. Why is a broad planting hole useful?

A. It gives roots easier access to surrounding soil
B. It hides the root flare
C. It holds plastic around the roots
D. It removes the need for water

14. What should be removed before planting?

A. Plastic and tight material around the roots
B. All living roots
C. The main stem
D. Every leaf

15. Which mulch practice is correct?

A. Pile mulch against the trunk
B. Keep mulch away from the trunk and root flare
C. Cover the whole stem
D. Use any waste material

16. When should staking be used?

A. For every tree forever
B. Only when needed for support or protection
C. To stop all stem movement
D. To replace watering

17. Why keep tree records?

A. To learn what care works and notice change
B. To make the course longer
C. To avoid looking at the tree
D. To replace all practical work

18. Which is an urgent warning sign?

A. A fresh major crack
B. One normal old leaf
C. A small ant on the soil
D. Shade under the tree

19. What should a beginner do with a hanging branch above a path?

A. Stand under it for a photo
B. Pull it down
C. Keep people away and report it
D. Ignore it

20. Which statement is correct?

A. Planting is the end of tree care
B. A new tree needs follow-up care and records
C. All trees need the same amount of water
D. Fast growth is the only selection quality

Part B: Practical portfolio

Submit all four tasks. Use your own observations and photos.

Task 1: Tree service and conflict observation

Choose one real tree. Upload one whole-tree photo. Explain three services it provides, two possible conflicts, and whether it is suitable for its present place.

Task 2: Planting site assessment

Choose one possible planting place. Upload four site photos. Explain the purpose, space, light, soil, drainage, water, hazards, care responsibility, suitable tree size, and two possible species or tree types.

Task 3: Young-tree quality check

Inspect one seedling or young tree. Upload a whole-plant photo and two close photos. Rate leaves, stem, branches, root flare, visible roots, and soil or container condition. Give an overall Accept, Reject, or Need expert advice decision.

Task 4: Planting and early-care plan

Plant a suitable young tree with permission, complete a safe demonstration, or submit a detailed plan. Show correct planting depth, watering, mulch, protection, responsibility, and a four-week care schedule.

Portfolio rules

- Photos must be taken by the student for this assignment.
- A face is not required in any photo.
- Do not enter private land without permission.
- Do not stand in traffic or under a dangerous tree.
- Do not climb or use a chainsaw.
- Do not plant without land permission and an aftercare plan.
- Write Unknown when identification is uncertain.
- AI feedback may ask for clearer evidence or a revised answer.

Student reflection

What is the most important idea you learned in this module?

_____

_____

What tree-care problem do you now notice in your community?

_____

_____

What action can you safely take in the next month?

_____

_____

Glossary

Word	Meaning
Aftercare	Work done after planting to help a tree survive and grow.
Arboriculture	The care and management of individual trees and groups of trees.
Arborist	A person trained in tree care.
Canopy or crown	The branches and leaves above the trunk.
Compacted soil	Soil pressed tightly so air, water, and roots move through it with difficulty.
Conflict	A problem between a tree and people, structures, services, crops, or another land use.
Drainage	How water moves through or away from soil.
Establishment	The period after planting when a tree grows roots into the surrounding soil.
Hazard	Something with the potential to cause harm.
Mulch	Material placed on the soil surface to protect soil and reduce weeds and water loss.
Nursery stock	Young plants produced for planting elsewhere.
Root ball	The roots and soil held together when a tree is lifted or removed from a container.
Root flare	The wider base of the trunk where the main roots begin.
Species	A group of living things with the same scientific identity.
Target	A person, building, road, vehicle, or other object that could be hit by a falling tree or branch.
Tree guard	A structure used to protect a young tree from damage.

Source notes

This module is an original KETSO Academy work. The sources below were used to verify general tree-care facts. The lesson text, examples, activities, quiz, and assignments were written in new wording. No previous commercial course text was used.

[1] USDA Forest Service. Tropical Community Tree Guide: Benefits, Costs, and Strategic Planting

[2] University of Minnesota Extension. Planting and transplanting trees and shrubs

[3] USDA Forest Service. Plant Procurement for Agroforestry

[4] USDA Forest Service. Tropical Community Tree Guide, planting guidance

[5] USDA Forest Service. Monitoring Young Tree Performance with Citizen Scientists

[6] USDA Forest Service. Urban Tree Risk Management: A Community Guide

Safety source. CDC/NIOSH: Tree Work is Dangerous - Do Not Get Hurt, Get Trained

Additional context. FAO: Guidelines on Urban and Peri-urban Forestry

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