The complete beginner workflow

How to grow plants in soil

Start by identifying the plant and its growing environment. Then work through the root zone, water, light and nutrition in that order. Use the plant planner to prepare a source-linked care sheet; use this guide to understand each action.

This draft reviews 109 spreadsheet records and 876 original populated data cells. It offers 106 plant profiles, with 73 source-specific numeric pH ranges. Broad common names, climate differences and missing evidence remain visible. A reviewed cell is not necessarily a scientifically validated number.

All 20 images are AI-generated instructional illustrations. They show methods and equipment; they do not prove biological outcomes or represent experimental photographs. Each lesson includes a video plan for your future footage.

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Lesson 01

How to Grow Almost Any Plant in Soil

A useful growing guide starts with the plant, the place and the root environment. It then connects those observations to a manageable routine: choose suitable planting material, prepare the site, water according to need, supply missing nutrients and check the response. The accompanying generator turns that process into a plant-specific cheat sheet. Treat its source-backed ranges as starting guidance for the stated conditions, and keep the source notes beside the numbers.

Record the common name, botanical identity where known, cultivar, rootstock if grafted, age and current stage. Decide whether your goal is foliage, flowers, edible leaves, roots, fruit or maintaining a long-lived specimen. Broad names such as orchid, bamboo, melon and citrus need another level of identification before precise environmental settings become useful.

For fruit plants, check pollination before buying fertilizer. An apple generally needs compatible pollen from another variety; rootstock also changes mature size and time to bearing. Those are planning requirements that a nutrient ratio cannot solve. Choose varieties suited to your local climate and available space. Keep the nursery label and record where the plant came from. UMN Extension: Growing apples.

Start the cheat sheet by writing the plant's name, purpose and current stage. Photograph the whole plant and its label. For seed-grown plants, keep the seed packet. For grafted trees, record the rootstock if supplied. If identity is uncertain, resolve it before selecting a detailed recipe. The instructional images accompanying this guide illustrate actions and equipment; they are not experimental evidence or diagnostic proof.



Keep the seed packet and record the botanical name and cultivar; the image label is intentionally blank. AI-generated illustration.

Video idea · Identify your plant

Demonstrate: Fill the identity fields from a real label, then show which information is still missing.

Shots: Whole plant → Nursery label → Leaves and growing tip

Takeaway: A precise identity makes the rest of the plan useful.

Your video link: _____

Lesson 02

Choose the site and observe the sun

Describe the site on an ordinary day and after heavy rain. Record direct-sun hours, shade from buildings and trees, exposure to wind, slope, drainage, available irrigation and room for mature growth. Indoors, note the window direction and distance from glass, then assess the light at the actual leaf position. A bright-looking room can contain very different growing conditions within a few feet.

Use those observations to select a suitable plant or improve the location. Indoor foliage plants differ substantially in light needs, while citrus needs bright light to support flowering and fruiting. Qualitative categories such as full sun or bright indirect light are useful when the crop reference supports them; a fabricated PPFD number is less useful. UMN Extension: Lighting for indoor plants.

Mark the intended location and observe it in the morning, around midday and later in the afternoon. Note when direct sun reaches it and which structures create shade. Repeat when the season changes. Place containers where you can reach them comfortably for watering and inspection. Allow for the mature plant's spread, access paths and supports rather than arranging plants only around their purchase size.



Observe the site at several times of day before matching a plant to its light conditions. AI-generated illustration.

Video idea · Map sun and space

Demonstrate: Draw a simple site map with sun periods, water access and mature spacing.

Shots: Site at three times → Shadow line → Tape measure beside planting area

Takeaway: Observe the actual growing position before choosing the plant.

Your video link: _____

Lesson 03

Collect a useful soil sample

Sample each distinct bed or management area according to the laboratory's instructions. Tell the laboratory which crop you plan to grow and provide its requested history. Save the report, sampling date, sample depth and analytical methods. A report can identify excess nutrients as well as deficiencies, helping you decide whether fertilizer or compost is appropriate. UMN Extension: Soil testing.

Get the laboratory's sampling instructions before taking soil. Use a clean tool and container. For a representative bed sample, collect the prescribed number of small samples across the area at the requested depth, combine them as directed and label the submitted portion clearly. Keep areas with different soil, fertilizer history or obvious problems separate so the result remains interpretable.

Write the sample identifier on your cheat sheet and mark the sampled area on a sketch. Tell the laboratory what you intend to grow. Do not substitute a reading from a simple garden probe for the full analytical information required to calculate a nutrient recommendation. Store the actual report so future decisions can be checked.



Combine samples from the same management area using clean equipment; follow your laboratory's depth and sampling instructions. AI-generated illustration.

Video idea · Take a soil sample

Demonstrate: Demonstrate collecting and labeling a sample using the chosen laboratory's instructions.

Shots: Clean trowel and bucket → Sampling positions → Labeled laboratory bag

Takeaway: A good sample represents a defined area.

Your video link: _____

Lesson 04

Read the soil report and set the pH plan

Enter the laboratory's recommendation into the generator with its original units and area. Keep soil-test ppm separate from a concentration in irrigation water: the sample, extraction and interpretation differ. A generic reading called 'ppm' does not establish how many grams of fertilizer a plant needs. For containers, ask the laboratory which substrate test and sampling method it supports; do not assume a garden-soil interpretation applies.

Compare measured soil pH with a reference suited to the plant and region. Keep the recommended range separate from the amount of amendment required to reach it. Soil texture, buffering and the amendment determine the dose; the difference between two pH numbers is insufficient by itself.

Blueberry illustrates why this matters. It requires an acidic root environment, and high pH can produce nutrient-related symptoms even when adding more fertilizer seems tempting. Acidification is a process to plan and verify, rather than an immediate rescue treatment. Record the amendment, rate, date and follow-up test. References sometimes give different acceptable and preferred ranges; retain that distinction instead of averaging them into an invented optimum. UMN Extension: Growing blueberries.

Highlight the crop recommendation, nutrient units and treated area before entering anything into the calculator. Separate the measured concentration from the recommended application: a laboratory may report one in ppm and the other in pounds per area. If the report recommends no added phosphorus, preserve that zero rather than replacing it with a general-purpose feeding recipe. Ask the laboratory about unclear interpretation.



Use actual laboratory findings and their crop-specific recommendations. The report shown is illustrative and contains no test results. AI-generated illustration.

Video idea · Read a soil report

Demonstrate: Transfer one real or clearly labeled sample report into the cheat sheet without changing its units.

Shots: Sample ID → pH and nutrient rows → Recommendation and units

Takeaway: Measured soil values and fertilizer recommendations are different fields.

Your video link: _____

Lesson 05

Understand texture, structure and drainage

Take a small amount of garden soil, remove coarse debris and moisten it gradually. Feel whether it is gritty, smooth or sticky. Try forming a ball and then gently squeezing a ribbon between thumb and finger. A texture key can help interpret these observations, but a home assessment is approximate. Minnesota DNR: Soil texture field tests.

Observe the bed after rain as well. Note persistent puddles, hard compacted layers and areas that dry much faster than others. Texture describes the mineral particle mixture; it does not fully describe compaction, organic matter or drainage at your site. Record both the soil description and what it actually does when watered.

Use that information to decide whether the site fits the crop, needs improvement or should be replaced by a raised bed or suitable container. Do not assume every plant labeled 'loamy' needs the same preparation.



Crumb structure can be observed by hand; appearance alone cannot establish pH or nutrient status. AI-generated illustration.

Video idea · Feel and assess soil

Demonstrate: Compare soil feel and observe drainage separately.

Shots: Dry sample → Moistened ball → Ribbon close-up → Bed after rain

Takeaway: Texture and drainage are related but are not the same observation.

Your video link: _____

Lesson 06

Choose the root medium and its ingredients

Describe soil by function as well as texture. Does it drain after watering? Does it stay wet at root depth? Does it dry so quickly that roots repeatedly lose access to water? In containers, select a mix appropriate to the plant and a pot with drainage, and account for any fertilizer already incorporated into the mix. Potting materials differ in moisture retention, aeration and nutrient-holding capacity. Mississippi State Extension: Care and selection of indoor plants.

Match the preparation to the crop. Agave needs sharply drained conditions, whereas cranberry needs an acidic root environment that stays moist without remaining saturated. Neither is adequately described by the word 'sandy' alone. Improve or change an unsuitable site before expecting fertilizer to correct the resulting growth problems. NC State: Agave; University of Maine: Growing cranberries.

For a beginner's container, a suitable prepared mix provides a more reproducible starting point than an improvised ingredient blend. Read its intended use and whether it includes fertilizer or a wetting agent. If the crop needs a specialist mix, choose one for that root environment. Record the product and ingredients so the next repotting can reproduce or deliberately change the result.



These are examples of substrate ingredients, not a mixing recipe. Choose a tested formulation suited to the plant and container. AI-generated illustration.

Video idea · Choose substrate ingredients

Demonstrate: Compare two mixes by intended use, ingredients and included fertilizer.

Shots: Mix label → Separate labeled ingredient bowls → Plant and intended pot

Takeaway: Select a root medium for the crop and container.

Your video link: _____

Lesson 07

Prepare and mix the medium

Use a clean tub large enough to turn the material without spilling. If following a validated crop-specific recipe, measure every ingredient with the same volume measure unless that recipe specifies mass. Write the proportions before mixing. Break apart large dry lumps gently and distribute components evenly; avoid compressing the mixture into a dense block.

Moisten the medium before planting so water is distributed through it, especially when it contains dry peat. Add water gradually and turn the mixture until evenly damp rather than saturated. Fill the container loosely and leave room at the top for watering. University of Maryland gives these steps for container planting. University of Maryland Extension: Planting vegetables in containers.

Make only the changes you can document. Adding fertilizer, castings and compost without quantities makes it difficult to know what the roots will receive.



Premoisten and blend the chosen substrate evenly without making a waterlogged slurry. AI-generated illustration.

Video idea · Prepare a uniform medium

Demonstrate: Prepare one container batch with recorded ingredients and water added gradually.

Shots: Measured ingredients → Turning mix in tub → Gradual moistening → Loose fill

Takeaway: Uniform preparation produces a repeatable root environment.

Your video link: _____

Lesson 08

Choose a pot that drains

Select a container with adequate root space, stability and unobstructed drainage. Check the underside before filling it. If using a decorative pot without holes, use a separate draining inner pot and remove collected water after watering. A layer of gravel underneath the mix does not improve container drainage. NC State Extension: Plants grown in containers.

Place the pot where its outlet remains open; a suitable support can keep holes from being blocked against the ground. Check that draining water has somewhere appropriate to go. Special self-watering containers have their own reservoir and overflow design, so follow their instructions rather than managing them as an ordinary pot.

Record container dimensions or volume and the mix used. Those details help explain watering changes and distinguish a plant's needs from the effects of its container.



Use a pot with functioning drainage holes. Gravel shown beside the pot is not a drainage layer. AI-generated illustration.

Video idea · Check container drainage

Demonstrate: Inspect an empty pot and demonstrate how collected water is removed.

Shots: Drainage holes → Inner pot and decorative cover → Water leaving pot

Takeaway: Drainage needs a clear exit, not a gravel layer.

Your video link: _____

Lesson 09

Transplant and help the plant establish

Use healthy seeds or plants and follow the crop's guidance for planting season, depth and spacing. Prepare supports before they become difficult to install. Record the planting date and initial size so later growth can be judged against a real baseline.

Acclimate indoor-raised seedlings gradually to outdoor sun, wind and temperature changes. Begin with protected exposure and increase it as conditions allow; this reduces the risk of damaged leaves and transplant stress. UMN Extension: Starting seeds indoors. Establishment instructions can differ from mature-plant care. For example, the OSU kiwi guide advises against putting fertilizer or manure directly in the planting hole. Use the relevant crop instructions rather than a universal planting-hole recipe. OSU Extension: Home-garden kiwifruit.

Moisten the root ball enough to handle it without crumbling, then slide it out while supporting the plant. Inspect for severe circling roots or damaged tissue and follow crop-specific correction advice. As a general starting point, position the root ball at its previous depth; do not bury the stem or crown indiscriminately. Some crops, notably tomatoes, have different planting-depth options, so check the plant instructions. UMN Extension: Tomato planting depth.

Backfill gently, water to settle the medium and check the final depth. Add the date, initial size and a photograph to the log. Keep the establishing plant under observation instead of assuming it immediately needs a mature feeding program.



Support the rootball while lowering the transplant. For lettuce, finish with the rootball surface level with surrounding soil and leave the crown exposed. AI-generated illustration.

Video idea · Transplant at the right depth

Demonstrate: Move a healthy transplant while preserving the correct planting depth for that crop.

Shots: Root ball → Depth comparison → Gentle backfill → Initial watering

Takeaway: Establishment begins with roots, depth and acclimation.

Your video link: _____

Lesson 10

Deliver water to the root zone

Use a checking routine rather than an automatic calendar dose. Examine moisture where the roots are, consider recent rain or irrigation and notice whether the pot or bed is draining normally. In containers, water the mix effectively and allow excess water to leave; avoid leaving an ordinary freely drained pot standing in collected water. Different plants require different degrees of drying between waterings. University of Maryland Extension: Watering indoor plants.

Apply water slowly enough to enter the medium rather than run across its surface. Move the watering outlet around the root area so one narrow channel does not receive everything. For a conventional container, allow drainage and remove collected water. In a bed, check beneath the surface afterward to see whether the intended root zone became moist.

Record the amount applied and the method used. Watch for water escaping down the pot wall while the central root ball stays dry. If wetting is uneven, pause and investigate the medium rather than increasing fertilizer. Keep leaves and fruit from staying wet unnecessarily when the crop guidance favors watering at the soil.



Direct a gentle flow onto the root zone and check soil moisture before watering again. AI-generated illustration.

Video idea · Water the roots evenly

Demonstrate: Water a container and then inspect whether the root ball was wetted evenly.

Shots: Slow watering → Soil surface → Drainage → Moisture below surface

Takeaway: The goal is useful root-zone moisture.

Your video link: _____

Lesson 11

Decide when to water again

Record volume and frequency separately. A plant receiving little water frequently may behave differently from one receiving a thorough watering less often. Adjust the interval as weather, leaf area and root occupancy change. When a plant wilts, check moisture before watering again: wilt alone does not tell you whether the root zone is dry or whether roots are struggling in wet conditions.

Lift a manageable pot after watering and draining, then compare its weight as it dries. Combine this with checking moisture below the surface and learning the crop's preferred drying pattern. A dry surface alone may conceal wet material lower down. For heavy containers, use observation and a suitable probe or sample rather than attempting to lift them.

Keep a checking schedule, then water only when the evidence and plant requirements justify it. Record unusually hot, windy or cloudy periods alongside watering. If the pot remains wet for much longer than before, examine light, temperature, roots and drainage. If it dries dramatically faster, look at plant growth, weather and root occupancy before assuming the same interval still fits.

An everyday log entry can be brief: checked, still moist, no water; or checked, dry enough for this crop, watered and drained.



Check moisture below the surface and learn the weight of a pot before and after watering. AI-generated illustration.

Video idea · Compare moisture and pot weight

Demonstrate: Compare moisture observations with pot weight over several days.

Shots: Wet-drained pot → Same pot later → Finger or probe check → Log entry

Takeaway: Check regularly; water according to evidence.

Your video link: _____

Lesson 12

Read fertilizer numbers and build the nutrient budget

The three familiar fertilizer numbers are percentages by mass of nitrogen, available phosphate expressed as P2O5, and soluble potash expressed as K2O. They are not three percentages of elemental N, P and K. To compare with an elemental analysis, multiply the phosphate number by approximately 0.4364 and the potash number by 0.8301. Penn State presents the rounded factors 0.44 and 0.83. Penn State Extension: Fertilizer conversions.

A ratio alone cannot determine dose. A 4-4-4 and an 8-8-8 have the same ratio but different nutrient concentrations. Record the exact product, formulation, label rate, application method and feeding interval. Include every product in the nutrient budget, especially when combining a base fertilizer with amendments or supplements.

Start with a justified nutrient requirement, not a desired bottle ratio. If a recommendation calls for 10 grams of nitrogen and a dry product contains 4% nitrogen, the arithmetic is 10 divided by 0.04: 250 grams of product. That amount also contains 10 grams each of label phosphate and potash. Check those additional inputs against the recommendation before choosing the product. This example demonstrates accounting; it is not a dose for any particular crop.

Keep the current product label beside the calculator. Choose the correct units for the report and product, and check the application interval separately. The computed result must fit the crop recommendation, the product directions and the size of the treated area.



Read the analysis and application directions; nutrient percentages alone do not determine the dose. AI-generated illustration.

Video idea · Read the guaranteed analysis

Demonstrate: Calculate product mass for a clearly labeled arithmetic example and show accompanying phosphate and potash.

Shots: NPK grade → Guaranteed analysis → Calculator with units

Takeaway: A fertilizer ratio cannot tell you the dose.

Your video link: _____

Lesson 13

Measure the liquid feed

The selected liquid options are FloraMicro, FloraGro and FloraBloom, plus Dyna-Gro Grow 7-9-5. Use the current label for the exact bottle and the applicable soil or container directions. Record a Flora program as three individual product amounts so the combined contribution is transparent. Do not treat a brand's stage name as independent evidence that every species needs that composition.

For liquids, a volume-based label instruction can be scaled directly to the intended mixing volume. Calculating nutrient mass from a percentage by weight additionally requires the product density or a measured product mass. Keep application volume, treated area, number of plants and interval visible. A perfectly calculated concentration can still deliver the wrong total amount when applied too often or to the wrong area.

Use a graduated measure or syringe suitable for the required amount. Read the scale carefully at eye level and confirm whether the instructions use litres, US gallons or another unit. Prepare a measured water volume and write down each product amount before adding anything. If the requested amount is too small for your measuring tool, choose a more precise tool or an appropriately scaled batch.



Measure liquid fertilizer with a suitable dosing tool using the actual product label. AI-generated illustration.

Video idea · Measure liquid fertilizer

Demonstrate: Scale an applicable label rate to a measured batch without introducing a plant-specific target.

Shots: Bottle label → Graduated measure → Water volume mark → Written recipe

Takeaway: Accurate volume and units make the recipe repeatable.

Your video link: _____

Lesson 14

Dilute each product separately and follow mixing order

For the Flora trio, the manufacturer instructs users to shake the bottles, add FloraMicro to fresh water first and stir well, then add FloraGro and/or FloraBloom. Never combine the concentrates directly. Add each product to the water separately, mixing before the next addition. Follow the exact current label if its directions differ. General Hydroponics: FloraMicro label.

Keep this operation separate from selecting a feeding rate. Correct mixing does not prove the resulting recipe is appropriate for your plant. Dyna-Gro is another selected base option; do not automatically stack a full Dyna-Gro program on top of a full Flora program. Account for every nutrient addition and the nutrients already present in soil or mix.

Use the applicable soil directions and log the batch, date, applied volume and plants treated. Follow label instructions for handling, storage and cleanup.



Add the measured product to water and mix thoroughly. Do not combine concentrates directly. AI-generated illustration.

Video idea · Mix a liquid batch

Demonstrate: Demonstrate the manufacturer's mixing sequence with clearly labeled demonstration quantities.

Shots: Fresh measured water → Micro added first → Stirring → Next product added separately

Takeaway: Dilute one product at a time; do not combine concentrates.

Your video link: _____

Lesson 15

Weigh dry amendments

The selected dry-product library includes Jobe's 4-4-4, langbeinite, worm castings, Flower Girl dry 3-9-4 and CytoPlus powder. Keep these as separate inputs with their own label, form and role. Verify the exact bag because similar product names can refer to different formulations. A powder is not interchangeable with a ready-to-use liquid, and an amendment should not acquire a complete fertilizer analysis merely because it appears in the feeding plan.

Weigh dry additions where practical and record the treated area or container volume. The calculator can total the nutrients declared on labels, but release into plant-available forms is another question. Check the soil result before adding phosphorus or potassium repeatedly. Choose an application interval appropriate to the product and growing conditions, then review plant response before repeating it.

Place a clean container on a scale and tare it to zero. Add the planned product slowly, then record the mass. Calculate separate masses for separate products rather than measuring one blended handful. If a label uses tablespoons or cups, use that specified measure unless you have established the product's actual mass for that volume. Do not assume all dry products have the same bulk density.



Tare the container before weighing; convert scoops to mass only with product-specific evidence. AI-generated illustration.

Video idea · Weigh dry products

Demonstrate: Weigh each chosen dry amendment against a documented recommendation.

Shots: Scale zeroed → Product being added → Target mass → Separate labeled amounts

Takeaway: Mass accounting exposes the full nutrient input.

Your video link: _____

Lesson 16

Use worm castings with realistic expectations

Worm castings vary with the material processed and the finished product. NCDA's summary of 227 vermicompost samples reports dry-weight nitrogen of 1.2–2.1%, elemental phosphorus of 0.2–0.4% and elemental potassium of 0.4–0.9%. These are sample-summary ranges, not a guaranteed analysis for your bag; their elemental P and K also differ from label oxide conventions. NCDA: Nutrients in compost.

Use a product-specific analysis when available. HealthyGrow's listed 1-0-0 castings, for example, distinguish 0.1% water-soluble and 0.9% water-insoluble nitrogen. HealthyGrow: Worm castings. Research synthesis also shows why total nitrogen cannot simply be counted as immediate feeding: a 2021 analysis modeled low average short-term availability for vermicompost, while reporting limitations in model performance. That result does not supply a universal release coefficient for your soil. Geisseler and colleagues, 2021.

Record the castings brand or source, analysis and amount used. Note whether an analysis is expressed on a dry or as-received basis. A moist bag cannot be assigned a dry-weight nutrient percentage without knowing moisture content. Treat castings as an identified input in the root medium or feeding plan, and keep any estimated nutrient release visibly separate from guaranteed total content.



Worm castings are an amendment with variable composition; their appearance does not establish nutrient content. AI-generated illustration.

Video idea · Document worm castings

Demonstrate: Compare a product label with the published sample-summary ranges without substituting one for the other.

Shots: Product analysis → Castings texture → Weighed amount → Total versus available column

Takeaway: Total nutrients and immediately available nutrients are different.

Your video link: _____

Lesson 17

Apply a dry topdressing carefully

Confirm that the product permits topdressing for the crop and situation. Mark the area or count the containers covered by the calculated amount. Distribute the weighed material evenly over the specified root-zone area, keeping it away from direct contact with stems and crowns as directed. Do not leave the whole dose in one concentrated pile. University of Maryland Extension: Fertilizing vegetable gardens.

If the label calls for incorporation, work it into the surface gently without cutting substantial roots. If it calls for watering in, apply water as instructed and check that drainage still works. Some products are intended for mixing before planting rather than repeated surface application, so follow the formulation's method.

Update the log immediately with product, quantity, area and date. Make the next review date a prompt to assess conditions, not an automatic command to repeat the dose. Include previous amendments when evaluating the next application.



Apply a measured label dose evenly and follow incorporation and watering instructions. AI-generated illustration.

Video idea · Apply a measured topdressing

Demonstrate: Distribute a documented label-compatible amount and record the application.

Shots: Marked treatment area → Even spreading → Clear stem space → Log entry

Takeaway: Even placement and a complete history matter as much as arithmetic.

Your video link: _____

Lesson 18

Monitor light, temperature and humidity

Under grow lights, record intensity at the canopy, operating hours, lamp distance and the measurement method. PPFD describes instantaneous photon delivery; daily light integral describes the accumulated daily quantity. With constant artificial light, DLI equals PPFD multiplied by hours and 0.0036. For example, 200 micromoles per square metre per second for 12 hours supplies 8.64 moles per square metre per day. This is a calculation example, not a plant recommendation. Iowa State Extension: Supplemental light.

Outdoor sunlight varies through the day, so a single midday reading cannot represent the whole day. Keep photoperiod separate from total light: extending operating hours changes the light-dark schedule as well as the daily photon total. Obtain crop-specific flowering guidance before changing that schedule.

Record day and night air temperatures, root-zone temperature when relevant, frost exposure and seasonal requirements. A number describing seed germination cannot automatically be reused for mature growth or fruit set. Banana provides a useful example: UF/IFAS reports different best temperatures for shoot growth and fruit growth. UF/IFAS: Banana growing.

Measure indoor humidity before adjusting it, and keep air movement and leaf wetness in view. Occasional misting does not maintain a stable room humidity target; its effect is brief. Penn State Extension: Humidity and houseplants. Avoid making an unsupported humidity percentage compulsory for every plant. Outdoors, cultivar and site selection are often more practical controls than trying to force the entire environment into a narrow range.



Measure conditions at plant level; a reading describes the environment, not a universal optimum. AI-generated illustration.

Video idea · Measure the growing environment

Demonstrate: Record actual measurements, then distinguish instantaneous light, daily total and photoperiod.

Shots: Light meter at canopy → Timer → Thermometer/hygrometer → Seasonal comparison

Takeaway: Environmental numbers need a measurement location and growth-stage context.

Your video link: _____

Lesson 19

Troubleshoot the whole plant

Keep a short log of watering, fertilizer amounts, weather or indoor conditions, growth and symptoms. Photograph the same plant from the same angle periodically. Inspect leaf undersides, growing tips and the root environment. When growth disappoints, review identity, light, drainage, watering and recent changes before adding another product.

Yellow leaves, brown tips and weak growth have several possible causes. Write a working explanation and the observation that would support or weaken it. Check a suitable diagnostic reference or extension service when the cause remains uncertain. Make one justified change, define when you will reassess and judge new growth as well as old damage. This turns the cheat sheet into a record of decisions and evidence instead of a list of settings to chase.

Begin with the whole plant and its surroundings, then examine newer and older leaves, the leaf undersides, stem base and accessible roots. Note whether symptoms affect one plant or several sharing the same treatment. Photograph both healthy and affected tissue for comparison.

Before changing fertilizer, review recent watering, transplanting, temperature changes, sprays and amendments. When seeking diagnostic help, provide the plant identity, location, timeline, root-medium details and photographs. A generated symptom illustration cannot diagnose a real plant.



Check leaves, roots and growing conditions before attributing symptoms to a nutrient deficiency. AI-generated illustration.

Video idea · Inspect roots, stems and leaves

Demonstrate: Work through a symptom checklist and explain what additional evidence is needed.

Shots: Whole plant → Old versus new leaves → Leaf underside → Accessible roots

Takeaway: Diagnose the cause before changing the feeding plan.

Your video link: _____

Lesson 20

Harvest, maintain and improve the next plan

Add crop-specific harvest cues, expected maturity under local conditions and any storage requirements to the cheat sheet. For perennial plants, include pruning, training, pollination, dormancy and overwintering. Feeding should follow those requirements rather than a generic annual veg/bloom switch.

Strawberry is a clear example: June-bearing, ever-bearing and day-neutral types distribute production differently, so their management cannot be represented accurately by one universal calendar. UMN Extension: Growing strawberries. At the end of a crop or season, save yield, quality, problems and the final input totals. Use that record, the next soil assessment and the cited crop guidance to revise the following plan.

Complete the cheat sheet with harvest cues, support and pruning tasks, pollinizer needs, seasonal protection and the next soil-test date. Keep the cited reference with each plant-specific instruction. For every recommendation, the finished sheet should show what to do, how much or how often where justified, what observation triggers it and where the guidance came from.

At the next planting or season, compare the records rather than relying on memory. Preserve successful choices and revise the parts that caused repeated problems. Add your own demonstration videos to the relevant sections so the reader can see the same measured, documented process they are asked to follow.



Record planting, feeding, observations and harvests so the next cycle starts with better evidence. AI-generated illustration.

Video idea · Keep a harvest and maintenance journal

Demonstrate: Close a season's log and build the next plan from observations and crop guidance.

Shots: Crop-specific harvest cue → Measured yield → Season calendar → Completed cheat sheet

Takeaway: A growing guide improves through documented results.

Your video link: _____