Living Root Garden School — Unit Data Sheets

One recording sheet per unit, matched to what that unit asks you to record. Print the whole pack or just the sheet for the unit you are on.

Start here — the Unit 1 sheet is the fair-test data table from the program page. Sprouts: fill in the mission tables. Teens: fill in the mission tables plus the Level Up tables.

Unit 1: Worm Castings 101

Mission — Castings Hunt: examine a spoonful of castings with a magnifier. Level Up — fair test: same seed, same pots, same water, 3+ plants per group.

Castings Hunt — Texture:
Color:
Bits I could identify:

Fair-test prediction: which group will win, and why?

Week	Plain soil group — height	Castings-mix group — height	Notes

Result: which group won, and by how much?

Unit 2: The Worm Bin

Mission — Bin Blueprint: design a bin on paper with a one-week feeding calendar. Level Up — bin math (worms eat roughly half their body weight per day).

Day	Food added	Amount	Bin check (dry / wet / smell)

Rule that saves every beginner: pooled liquid = too wet. Add dry bedding. That liquid is leachate, NOT worm tea — never pour it on plants.

Teen bin math — household scraps per week:
Worms needed:
Bin size needed:

Unit 3: Soil Layers

Mission — Dig a Profile: sketch real layers in place. Level Up — jar test percentages.

Layer	Depth	Color	Texture	Notes

Jar test — sand %	Silt %	Clay %	My soil name

Unit 4: Soil pH

Mission — pH Map: test spots around the yard. Level Up — track one crop in two pH zones.

Spot	pH	What grows there

Teen growth comparison — week	Spot A growth	Spot B growth

Unit 5: Mycorrhizae

Mission — Fungus Hunt: find fungi in the yard. Level Up — diagram the trade deal.

Fungus found	Where it grows	Notes / sketch

Teen trade deal — the plant gives:
The fungus gives:
What happens if a plant loses its fungal partners?

Unit 6: Compost

Mission — Compost Recipe: write it, then start a heap following it. Level Up — C:N ratio estimate (browns ~60:1, greens ~15:1, target ~30:1).

My recipe — greens:
Browns:
Water / air plan:

Pile log — date	What I added	Pile check

Teen C:N estimate for my recipe:

Unit 7: Compost Critters

Mission — Critter Safari: one magnifier tally. Level Up — heap food web.

Creature	Count	Notes

Teen food web — trace one leaf from fresh to soil through at least four creatures:

Unit 8: Decomposers

Mission — Log Watch: three visits over two weeks. Level Up — decay-rate comparison.

Visit	Date	Creatures found	Changes since last visit

Teen decay comparison — material	Week 1	Week 2	Why the rates differ

Unit 9: Mushrooms & Fungi

Mission — Fungi Foray (Look Only): sketch three wild fungi where they grow; never eat one.

Fungus #	Growing on	Sketch notes

Level Up — map yard fungi over two weeks against rainy days.

Date	Rain?	New fungi?

Unit 10: Seeds

Mission — Seed Library: collect, sort, label, and plant seeds. Level Up — germination-rate trial.

Seed	Size	Travel method	Planted date	Sprouted? (date)

Germination trial — condition	Seeds planted	Seeds sprouted	Percentage

Unit 11: Roots

Mission — Root Hunt: compare two plants' roots. Level Up — root-to-shoot ratio.

Plant	Root type (tap / fibrous)	Longest root	Harder to pull?

Teen — roots (length / mass):
Tops (length / mass):
Root-to-shoot ratio:

Unit 12: Photosynthesis

Mission — Leaf Shadow: foil-covered patch vs uncovered leaf. Level Up — iodine starch test (adult supervision; never ingest test materials).

Day	Covered patch	Uncovered leaf

Starch test — leaf	Iodine result	What it means

Unit 13: Flowers

Mission — Flower Autopsy: dissect and label parts. Level Up — follow one flower to fruit.

Flower part	What it looks like	What it does

Flower-to-fruit journal — date	Stage	Visitors

Unit 14: Carnivorous Plants

Mission — Trap Watch: observe a nursery-bought plant (never wild-collected). Rule: each trap snaps only a few times in its life — observe, do not play.

Date	Trap #	Trigger hairs	Caught anything?	Notes

Teen — cost-benefit of carnivory: when does eating meat beat growing roots?

Unit 15: Pizza Garden

Mission — Pizza Plan: bed layout, spacing, planting calendar, plus one windowsill herb. Level Up — budget the whole bed.

Crop	Spacing	Plant date	Harvest

Teen budget — item	Cost

Timeline from sowing to first pizza:

Unit 16: Trees

Mission — Adopt a Tree: measure, sketch, and revisit one tree.

Date	Measurement	Change noticed

Level Up — your tree's life story: height, lifespan, and what shelters in it.

Height	Lifespan	Shelters

Unit 17: Herbs

Mission — Smell Test: blind-test your family on mint, basil, and rosemary.

Herb	Family guess	Right?	Notes

Level Up — dry one herb three ways; which keeps the most scent after a week?

Method	Scent after 1 week	Winner?

Unit 18: Grow Your First Garden

Mission — Plant Your Patch: plant one fast crop and log it weekly.

Week	Water	Growth	Notes

Level Up — budget the patch: costs vs what the harvest would cost at the store.

Item	Cost	Store price

Unit 19: Wildflowers

Mission — Wild Patch Survey: survey a wild patch without picking anything.

Flower	Color	Visitors

Level Up — wild patch vs lawn, fifteen minutes each: tally the difference.

Spot	15-min visits	Notes

Unit 20: Moss & Lichen

Mission — Tiny World Hunt: find moss, a lichen, and the Spanish moss impostor.

Tiny world	Where found	Sketch notes

Level Up — lichen map of three spots: what does it say about your air?

Spot	Lichen kinds	Air notes

Unit 21: Pollinators

Mission — Pollinator Menu: rank flowers by visitors. Level Up — visit-rate study.

Flower	Visitors seen	Rank

Teen visit-rate — flower type	Visits / 10 min (day 1)	Visits / 10 min (day 2)

Unit 22: Good Bugs, Bad Bugs

Mission — Ally Cards: five bugs, ally or troublemaker, with evidence. Level Up — pest-management plan.

Bug	Ally / troublemaker	Evidence

Teen pest plan — crop:
Pest:
Damage I will tolerate before acting:
Response ladder (least to most intervention):

Unit 23: Frogs & Toads

Mission — Pond Dip: catch, observe in a jar, release the same day where found. Frogs and toads themselves: eyes and ears only — permeable skin, no handling, never relocate wildlife.

Date	What I caught	Released? (where / when)

Teen — why frogs are indicator species (one local example):

Unit 24: Lizards & Skinks

Mission — Anole Watch: track color vs temperature and time of day. Watch-only — tails drop when lizards are grabbed.

Day	Color	Temperature	Time of day

Teen basking log — time	Temperature	Basking or hiding?

Unit 25: Good Snakes, Bad Snakes

Mission — Safety Poster: freeze, back away, get a grown-up. Book study only — no field contact with snakes, ever.

Venomous species (from the guide)	How to recognize it

Safety poster checklist — freeze / back away / get a grown-up: done?

Teen — why the coral-snake rhyme is unreliable:

Bite first aid: call emergency services fast, keep the person calm and still. No tourniquets, no cutting, no sucking out venom.

Unit 26: Backyard Birds

Mission — Fifteen-Minute Bird Watch: watch one spot twice, log every bird seen or heard.

Date	Bird seen/heard	What it was doing	Where

Level Up — two weeks of watches as a bar chart: which bird owns your yard?

Species	Sightings	Notes

Unit 27: Night Shift

Mission — Night Listening Walk: ten minutes outside after dark, log sounds and lights.

Time	Sound or light noticed	What it might be

Level Up — yard light audit: map lights, propose three moth- and bat-friendly changes.

Light location	On all night?	Change proposed

Unit 28: Chickens

Mission — Egg Investigation: compare two kinds of eggs, then draw your dream coop.

Egg type	Shell	Yolk color	Taste notes

Level Up — backyard-egg math: yearly feed cost vs a year of store eggs.

Expense	Cost	Store-egg comparison

Unit 29: Spiders

Mission — Web Survey: find and sketch three webs; leave every web standing.

Web #	Shape	Location	Builder

Level Up — thirty-minute web stakeout: tally caught vs escaped.

Time	Caught	Escaped

Unit 30: Backyard Mammals

Mission — Track and Sign Walk: log mammal evidence; scat is look-only, never touch.

Sign	Location	Best guess maker

Level Up — smoothed-dirt patch checked each morning for a week: visitor calendar.

Date	Prints seen	Sketch notes

Unit 31: Ants

Mission — Ant Trail Map: map a trail, then run the three-crumb test.

Trail from	Trail to	Carrying

Level Up — crumb test repeated at different times of day, counts at 5 and 15 minutes.

Food	5-min count	15-min count

Unit 32: Snails & Slugs

Mission — Slowpoke Census: count snails and slugs on a damp morning; wash hands after.

Spot	Snails	Slugs	Shell notes

Level Up — compare hiding spots: pot vs board vs leaf pile, same morning.

Cover type	Snail count	Slug count

Unit 33: Butterflies & Caterpillars

Mission — Host Plant Hunt: check host-plant leaves for eggs or caterpillars.

Plant	Eggs?	Caterpillars?	Notes

Level Up — fifteen-minute visit tallies at two flower types: which wins?

Flower type	15-min visits	Notes

Unit 34: Bees

Mission — Bee Watch: tally bee visits at one flowering plant for fifteen minutes.

Bee type	Flower chosen	Count

Level Up — morning vs afternoon tallies at the same plant.

Time of day	Visits	Notes

Unit 35: Beetles

Mission — Beetle Hunt: lift a log or pot gently, log every beetle, put it back.

Beetle #	Size / color	Wing covers?	Where

Level Up — twenty-minute night beetle watch vs daylight finds.

Day finds	Night finds	Notes

Unit 36: Bats

Mission — Dusk Watch: count bats at dusk with a grown-up; never touch a bat.

Time	Bats counted	Flight style

Level Up — bat-house placement plan with reasons for each choice.

Placement choice	Why

Unit 37: Turtles

Mission — Turtle Sign Survey: look for burrows and basking turtles; do not disturb.

Sign	Location	Notes

Level Up — gopher tortoise 'landlord' profile: who uses its burrows?

Species helped	How it uses the burrow

Unit 38: The Water Cycle

Mission — Jar Weather: sealed-jar water cycle log. Level Up — rain gauge + roof math (1 inch × 1,000 sq ft ≈ 620 gallons).

Day	What I saw in the jar

Storm date	Inches of rain	Roof gallons (inches × roof sq ft × 0.62)

Unit 39: Pond Life

Mission — Pond Watch (From the Bank): twenty minutes at the pond edge, log it all.

Time	Creature	Doing what

Level Up — food web of your pond; star every link you actually saw.

Eater	Eaten by	Seen?

Unit 40: Seasons

Mission — Season Journal: record one week of weather, growth, and surprises.

Day	Weather	Growing?	Surprise

Level Up — start a twelve-month weather and planting chart.

Month	Rain days	Harvests

Unit 41: Rain Gardens

Mission — Rain Watch: trace where rainwater goes in your yard, then plan a rain garden.

Water source	Flows to	Pools at

Level Up — measure the slope and size the rain-garden bowl on paper.

Measurement	Value