

**Ecology Action 2020
8-Month Online Internship
Curriculum Topics for 30 Classes**

-Will be updated and revised for 2021-

Presenters:

John Jeavons

Master Certified GROW BIOINTENSIVE® Teacher

John has been the Director of the Ecology Action Mini-Farming Program since 1972 and is the author of *How to Grow More Vegetables...* on GROW BIOINTENSIVE Sustainable Mini-Farming, which is currently in use in over 150 countries in virtually all climates and soils where food is grown. Versions are available in English, Spanish, German, French, Hindi, Russian, Kiswahili and Arabic. He is author, co-author and/or editor of over 40 Ecology Action publications. His major responsibilities include directing field and library research and education in GROW BIOINTENSIVE food-raising. He advises GROW BIOINTENSIVE projects in countries such as Mexico, Kenya, Russia and India, as well as all corners of the US. John holds a BA in Political Science from Yale University. Before coming to Ecology Action in 1972, he worked as a systems analyst in business, government and university settings. He has received the Boise Peace Quilt, Santa Fe Living Treasure, Giraffe, and Steward of Sustainable Agriculture awards for his public service. John's dream is to be a GROW BIOINTENSIVE mini-farmer.

Matt Drewno

Master Certified GROW BIOINTENSIVE® Teacher

Matt is certified in permaculture, restoration of oak-savanna ecologies and Biointensive food production. After a Bachelors of Architecture from Iowa State University, he founded Rhythmic Water Ecological Design, a permaculture and flow-form design business which served mid-western states. He has been working with Ecology Action since 2010 training individuals and communities in the principles of biologically intensive food production and is an Advanced-Level Certified Teacher. His experience includes organic farm-scale food production, design and implementation of food forests, residential-scale food production and community gardens. In 2014, he started the Victory Gardens for Peace Mini-Farm and Seed Bank in the town of Mendocino, CA. He serves on the board of Ecology Action and manages Victory Gardens for Peace, a research, education and demonstration Mini-Farm in Mendocino, California.

Class 1:

April 14

8:30 AM-5:00PM Pacific Daylight Time (PDT):

Class 1 Materials:

Class 1 *Reading Materials:*

- **Bar Graph: Food --Growing Areas for One Person's Annual Diet Using Different Agricultural Techniques and Citations**
- **HTGMV/2017: pp. 1-9, 33-43, 60-62, 222-229**
- **Booklet 31/2016: pp. 32-35**
- **Booklet 32/2007: pp. 18**
- **Booklet 41**
- **One Circle, pp. 145-149**

Growing Your Soil — Growing Yourself. Philosophy: *Human*. History. World Situation. Initial EA Goals. Discussions. Follow Up. Nutrient Cycling and Sustainability. Homework, Speed Reading, Journal and Assignments, including a 10-Bed Unit.

8:30: Check-in and Introductions: Be sure to have something key to share about yourself that is not on your Bio. For example, What do you you want to do with GROW BIOINTENSIVE more than anything else in the world. Each person will have 2 minutes for this. Keep it concise, so there will be enough time. (Extra time is in this timeframe to allow for maneuvering with ZOOM, and possible translation needs.)

10:30: Growing Your Soil — Growing Yourself: The Jeavons Center 17-Year Soil Build-up ppt. and ecologyaction.tv

11:00: Philosophy: *Human*: Ghandi, Alan Chadwick/Freia von Mulke, Samuel Nderitu in Sierra Leone, West Africa, Juan Manuel Martinez Valdez in Mexico. **Focus:** "How", 90%/10%, Radar, 4 mo. to 10 yrs. (Some topics may be picked up at a later time or date, depending if we are running on schedule.)

11:30: History: The French Gardeners, Extended Family Communities and Guilds

Noon: World Situation: Peak Soil, Water, Nutrients, SOM. UN-FAO re Water. NSA re Food Prices and Unrest.

12:30: Meal/Rest Break

1:30: Initial EA Goals: *One Circle*, pp.145-140. What will yours be?

2:00: Discussion: How has and does the current World Situation affect you?

3:00 Discussion: What *is* Sustainability?

3:30: Follow Up: What is sustainability? Alan Chadwick ***“Give back as much as you take, and a little bit more, and Nature will give back to you in Abundance.”***

4:00: Nutrient Cycling and Sustainability: Where does biomass come from? Where do minerals come from? Where do the biomass and minerals go? The *Importance* of Compost. Why a Vegan (without animals or animal products) system?: ***Bar graph ppt + 3DW Manual***).

4:30: Homework, Speed Reading, Journal and Assignments, including a 10-Bed Unit

5:00: Class Over

Class 2:
April 14

8 GROW BIOINTENSIVE Principles

Class 2 Materials:

- How Soils Work: pp. 3-5
- HTGMV/2017: pp. 15-32 and 126-136
- “Advantages of the GROW BIOINTENSIVE Method” 1/3/2003 3-Day
- Workshop Manual: Introduction
- TSVG/1999: pp.27-32

Foundational Concepts:

Soil “101”

All Protocols:

http://www.growbiointensive.org/grow_main.html?tab=6#TabbedPanels

Organic Material

Organic Matter

Humus

Take vs. Give

8:30 Check-in: Check-In and Questions

9:00 Foundational Concepts: Syltie: How Soils Work

10:15 The Hidden World of Soil – 3 Books:

- Teaming with Microbes (Revised) — The Organic Gardener’s Guide to the Soil Food Web,
- Teaming with Fungi —The Organic Grower’s Guide to Mycorrhizae,
- Teaming with Nutrients — The Organic Gardener’s Guide to Optimizing

Plant Nutrition

11:30 GROW BIOINTENSIVE Principles. HTGMV/2017 p. 2

12:30 Meal/Rest Break

2:00 Advantages of the GROW BIOINTENSIVE Method 1/3/2003: 3-Day Workshop Manual: Introduction (See Table of Contents: **Yield. Sustainability. General Nutrition. Protein Nutrition. Overview.**

3:15 The Mini-Farm as an Ecosystem: HTGMV/2017 pp. 126-136

4:45 Introduction of “Portfolios”/Notebooks to be kept throughout year

5:00 Class Over

[Homework]

Watch **GB DVD Self Teaching Series on Section 3, Part A & B.**

(<http://www.johnjeavons.info/video.html>, click on the tab for “part 3”)

[LEVEL 1] Read ***A Farmer’s Mini-Handbook: GROW BIOINTENSIVE Sustainable Mini-Farming: “Principle 1: Deep Soil Preparation*** (pgs. 1 & 2)

<http://www.growbiointensive.org/PDF/FarmersHandbook.pdf>

[LEVEL 2] Read ***The Sustainable Vegetable Garden/1999, “4. Preparing a Biointensive Bed: Double-Digging”*** (pgs. 27-32)

[LEVEL 3] Read ***How to Grow More Vegetables/2017: “Deep Soil Creation and Maintenance”*** (pgs. 15-32)

Journal Entry: What have I learned, what am I confused about, what do I want to learn next week, to learn next week?

Class 3:
April 21

Double-Digging and Observation in the Garden

Class 3 Materials:

- HTGMV/2017: pp. 44-63
- TSVG/1999: pp. 33-38
- GB Skill DVD Section 3, Parts A and B: http://www.growbiointensive.org/Self_Teaching.html

Foundational Concepts:

Microbes in the Soil—Needs and Interactions.

Observation: at the Heart of Understanding

The Practice: Double-Digging

8:30 Group Check-in/Review of last week/Questions

9:00 What is a microbe?

9:30 Why do we double-dig?

10:00 How we double-dig: Through GB Skill DVD: Double-digging Demonstration and Practice

12:30 Meal/Rest Break

2:00 Homework/Portfolio check-in

3:30 Introduction to Observation and Observation Exercises

5:00 Class Over

[Homework]

- Watch Self Teaching Series *GB Skill Video*: Part 5: A & B

Watch Compost with John

Jeavons <https://vimeo.com/ondemand/ecologyaction/117859601>

[LEVEL 1] Read *A Farmer's Mini-Handbook: GROW BIOINTENSIVE Sustainable Mini-Farming: Principle 2: Composting*

[LEVEL 2] Read *The Sustainable Vegetable Garden/1999*, Chapter 5, "What to feed a Biointensive Bed: Compost"

[LEVEL 3] Read *How to Grow More Vegetables/2017*, Chapter 3, "The Use of Compost and Soil Fertility"

Provide written answers to "Reading for Understanding Questions"

Journal entry: What have I learned, what am I confused about, what do I want to learn next week?

Class 4
April 28

Carbon. Basics of Sustainability. Minerals. Organic Matter. Compost. Water Retention. Multi-Year Experiences with 30:1, 45:1, and 60:1 Composts in Growing Calories and Dry Biomass Once the Compost Materials are Cured. Compost Building. Compost Sifting. Calculating Compost Applications. Applying Compost and Fertilizer. Different Composts: What do you see? Smell? How moist is it?

Class 4 Materials:

- *HTGMV/2017*: pp. 77-105. (Also, pp. 44-63: From Class 3 Info.)
- *TSVG/1999*: pp. 39-46
- Booklet 32, p.18
- Bed 21 Multi-Year Data Table — Attached.
- GB DVD: Sections 5A and B: <https://johnjeavons.org/video.html/>

Foundational Concepts:

Not all Compost and Carbon is Not Equal How All Compost and Carbon is Equal
Composting

Organic Material, Organic Matter, Humus The Practice: Compost Building + 3
Stages.

Ultra, Booklet 32, p. 18, Table 1 Compost, Fast

Deeper Questions + Videos (2) Multi-Year Bed 21 Compost Data

Compost sifting

Calculating Compost and Fertilizer Applications. Compost and Fertilizer
Application.

•••

8:30 Group Check-in, Questions

9:00 Seeing Carbon

9:30 (Review) Basics of Sustainability-Where does Carbon come from? Where do minerals come from? Where do they go?

10:00 Introduction to Organic Matter and Compost

11:00 Organic Matter, Mineral and Water Retention

11:30 Bed 21 and Different experiences with 30:1, 45:1, and 60:1 Composts in Growing Calories and Dry Biomass Once the Compost Materials are Cured

12:30 Meal/Rest Break

2:00 Compost Building Visual Practice: *GB DVD*: Sections 5A and B: "Compost"

3:30 Compost Sifting. Calculating compost applications. Applying compost and fertilizer. Different Composts: What do you see? Smell? How moist is it?

5:00 Class over

[Homework]

Watch Self Teaching Series, Part 2.

[LEVEL 1] Read *A Farmer's Mini-Handbook: GROW BIOINTENSIVE Sustainable Mini-Farming: Principle 3: "Intensive Planting"*.

[LEVEL 2] Read *The Sustainable Vegetable Garden* 1999, Chapter 6 "Seedling"

[LEVEL 3] Read *How to Grow More Vegetables/2017*, Chapter 5, "Open-Pollinated Seeds, Seed Propagation, Close Spacing, and Seed Saving"

Touch and explore several composts, what do you see? Smell? How moist is it? Record notes on your experience to share in class.

◆ Art, Craft and Efficiency.

Class 5
May 5

Class 5 Materials:

- **HTGMV/2017:** pp. 137-199
- **TSVG/1999:** pp. 47-72
- **Differences in Root Systems and Growth from Pricking Out Seedlings – 3-Day Workshop Manual: Seed Propagation**
- **“Design from the Heart”/“Quick 60/30/10 Sustainable Diet Design”** from 3-Day Workshop Manual

Foundational Concepts:

- What a Seed Needs
- Micro-climate and Living Mulch
- Water/ Soil/ Plant Interaction
- Water Saving in GROW BIOINTENSIVE

8:30 Group Check-in and Questions

10:30 Principle 3: Close Plant Spacing

12:00 Introduction/Overview of Water Saving in GROW BIOINTENSIVE: GB Water Saving ppt.

12:30 Meal/Rest Break

2:00 Demonstrations See GB DVD related sections: free downloadable at: <http://www.growbiointensive.org/Curriculum/>:

- Seed Propagation • Intensive Planting/Transplanting/Fertilization
- Watering: See GB DVD related sections: free downloadable at: <http://www.growbiointensive.org/Curriculum/>

4:00 Pricked out/not pricked out—evaluate differences in root development

5:00 Class Over

[Homework]

[LEVEL 1] Read *A Farmer's Mini-Handbook: GROW BIOINTENSIVE Sustainable Mini-Farming: Planning*

[LEVEL 2] Read *The Sustainable Vegetable Garden:/1999, Planning, pp. 47-72*

[LEVEL 3] Read *How to Grow More Vegetables/2017: Planning, pp. 137-199*

- ☐ Provide written answers to “Reading for Understanding Questions”
- ☐ In Garden Meeting: Take a post hole digger and dig 24” down in random garden beds, evaluate moisture level.
- ☐ Watch Vimeo www.ecologyaction.tv: “Diet Design from the Heart: with John Jeavons
- ☐ Journal entry: What have I learned, what am I confused about, what do I want to learn next week?

**Class 6
May 12**

Planning for Feeding Ourselves and the Soil

Class 6 Materials:

- **HTGMV/2017:** pp. 40 and 41 (from Class 2), pp. 137-199 (from Class 5)
- **3-Day Workshop Manual:** “Design from the Heart”/“Quick 60/30/10 Sustainable Diet Design” (from Class 5)
- **3-Day Workshop Manual:** One-Bed-Unit Exercise from inside cover (4-page form)
 - **3-Day Workshop Manual:** Diet Section, p. 2 and 3

Foundational Concepts:

60/30/10 Efficient Carbon Capturers: Bklt 31, Bklt 32,

3 Day Workshop Efficient Calorie Producers: *How to Grow More Vegetables/2017*
p. 40

Our Dietary Needs: 3-Day Workshop Manual: Diet Section, p. 2 and 3

The Practice:

Diet and Garden Design: Carbon Farming and Calorie Farming

Diet Design from the Heart

8:30 Group Check-in and Questions

9:00 Crop Personalities: Carbon and Calorie Crops Defined: *HTGMV/2017*, p.41,
Marginal Note (from Class 2)

10:00 Area Efficiency vs. Weight Efficiency: *How to Grow More Vegetables/2017*, p.40, Tables (from Class 2)

11:30 Introduction to the Master Charts, How to Grow More Vegetables/2017, pp. 137-199 (from Class 5)

12:30 Meal/Rest Break

2:00 Observing 60/30/10

3:15 Intro to Diet and Garden Design: “Diet Design by the Heart”

5:00 Class over

[Homework]

Watch Vimeo: “**Limited Inputs Experiment**” with Samuel Nderitu

Class 7

May 19

**Data Collection, Experimental Design and
A Whole-Systems Perspective**

Class 7 Materials:

- **HTGMV/2017:** pp. 40 and 41 (from Class 2), pp. 137-199 (from Class 5)
- **3-Day Workshop Manual:** “Design from the Heart”/“Quick 60/30/10 Sustainable Diet Design” (from Class 5)
- **3-Day Workshop Manual:** One-Bed-Unit Exercise from inside cover, a 4-page form (from Class 6)

- **Agribon Information Sheet**

- **Yield and Input Data Log Sheets:** in English and Spanish

- **Compost Log Sheet**

- **Goals, Initiatives and Activities after Completing the Online 8-Month Internship Preliminary Information Sheet**

- **Bed Crop Months Information Sheets**

- **Yields Booklet**

- **A Wonderful, Amazing, Tasty Vegan Recipe to Try**

Foundational Concepts:

Data Collection for GROW BIOINTENSIVE Mini-Farms

:Shade Netting
Developing an Investigative Mind
GROW BIOINTENSIVE as A Whole System

The Practice:

Data Collection Practice: Experimental Design- Spacing Trial

8:30 Group Check-in and Questions

9:00 Principle 8: Whole Systems Perspective: 1-Bed Unit Design Exercise

11:00 Data Collection: Crop Yield and Inputs + Observations, Compost Inputs

12:30 Meal/Rest Break

2:00 Experimental Design:

- Theory of variables and controls (~1:30)
- Yield vs. Fertility vs Income vs Nutrient Sustainability: Potatoes
- Yield vs. Nutrition vs. Marketability vs. Income: Lettuce
 - Yield vs. Nutrition vs. Nutrient Sustainability: Grain and Leaf Amaranth Interplanting: 6-inch/15 cm and 12-inch/30 cm spacing
- Personal experiences of experimental management (~0:30)
- Experience with on farm experimentation (~0:15)

4:15 Introduction to Year-Long Crop Personality/Experiment/data Project

5:00 Class over

[Homework]

◆ Choose crop for crop personality project, complete experimental design worksheet

- ◆ Study material covered
- ◆ Read pg. for Design Activity, Goal Setting

<https://vimeo.com/ondemand/ecologyaction/115871029?autoplay=1>

[LEVEL 1] Read *A Farmer's Mini-Handbook: GROW BIOINTENSIVE Sustainable Mini-Farming*: 60/30/10 Whole System

[LEVEL 3] Read *How to Grow More Vegetables/2017*, Whole System, pp. 126-136 + p. 39 (All from Class 2.)

- Provide written answers to “Reading for Understanding Questions”
- Journal Entry: What have I learned, what am I confused about, what do I want to learn next week?
- ***This Week's Study Session At Your Site***: One-Bed Unit Exercise page form. Make a copy of your Master Copy, and work on solving how to design and optimal One-Bed Unit with the people around you. Remember: This One-Bed Unit will be 1/40th of a Complete Balanced Diet grown in your region, culture, climate and soil, plus personal eating preferences. Sometimes, however, in order to provide an optimal solution, you may have to modify your preferences.

Class 8

May 26

Test Your Understanding: Level 1

Foundational Concepts:

- GB/B/b
- 1BU Redesign Plans/Plans
- 10BU Plans
- 40BU Plans Annual Site Goals and Reports
- 8 Elements, 60/30/10
- H/9 p. 39-41
- *Mind and Heart Design Effectiveness*
- Grow Soil/Food/Ecosystem/Income
- *1/2 Farmable Area in Wild*
- *Future Fertility – Transformation of Human Waste into Human Wealth, Revised February, 1998*
- *One Circle- How to Grow a Complete Diet in Less Than 1,000 Square Feet*
- *Test Your Soil With Plants, 2nd Edition 2013*

Class 7 Materials:

- **Compost Crops Production of Dry Biomass/Week:**

Example: The Filbert Dry Biomass Yield is 15 lbs/6.8 kg/year: .3 lbs/.136 kg/week

8:30 Group Check-in and Questions

9:00 Test Your Understanding: Level 1

10:30 Review of expectations during garden observation months

11:00 *Future Fertility Synopsis*

12:30 Meal/Rest Break

1:30 *One Circle Synopsis*

3:00 *Test Your Soil with Plants Synopsis*

5:00 Class over

Class 9

June 2

Gardening as a System and Building Your Project Vision

Class 9 Materials:

- **Ecology Action Booklet 34**
- **Ecology Action Information Sheet: Project Plan**

- **Ecology Action Information Sheet: 10-Year Goals**
- **Ecology Action Booklet 31, Form 2**

Deepening Your Knowledge:

- **Garden as a System**
- **Lettuce Phasing**
- **Reflections on Garden Intensive Learning Booklet 34**

Building Your Project: Project Goals

Project Vision Design 1: Goal Setting: It All Begins with Diet for You and Your Soil

8:30 Group Check-In, Questions and Homework

- **Calories I Need/day During Active and Less-Active Mini-Farming Seasons**
- **Revised Design from the Heart**
- **Revised One-Bed Unit Design**

9:30 Teaching Practice: Mini-Presentations of Learning Moments (Interns)

10:30 Group discussion reflecting on the “2 month” garden to date, intensive,

sharing from observational activities and learning journals.

11:30 Inter-Relationships of the Mini-Farm

12:30 Meal/Rest Break

2:00 Watch a Project Example: The Biointensive Method in Latin America (Juan Manuel Martinez)

<https://vimeo.com/ondemand/ecologyaction/125942932>

3:00 What is your project vision? / Presentation of Project Plan and *Expectations*

3:30 Goal Setting Exercise

4:30 It All Begins with Soil and Diet

5:00 Class over

[Homework]

- ♦ Watch on Vimeo: **Results of Grow Biointensive in Kenya** with Samuel Nderitu and Peris Wanjiru <https://vimeo.com/ondemand/ecologyaction/116364961>
- ♦ Watch on Vimeo: **Womens Empowerment Programmes** with Peris Wanjiru Nderitu <https://vimeo.com/ondemand/ecologyaction/115582775>
- ♦ **Booklet #31, Form 2** (study session)
- ♦ **Finalize Project and Personal Goals**
- ♦ **Nutrition reading**
- ♦ **Complete this week's Observation Activity**
- ♦ **Journal Entry:** What have I learned, what am I confused about, what do I want to learn next week?

Class 10

June 9

Nutrition from a *Farming* Point of View

Class 10 Materials:

Class 10 Materials:

- Ecology Action Booklet 21
- Ecology Action Booklet 2
- One Circle, pp. 1-72
- Ecology Action Booklet Booklet 31, December, 2016 *Update*; Form 3

Deepening Your Knowledge:

Booklet 21 Nutrition Calorie Farming Booklet 2 One Circle, pp, 1-72
Booklet 31 December, 2016 Update

Building Your Project:

Intro to GROW BIOINTENSIVE Diet Design Design 2: Base Mapping

8:30 Group Check-in and Questions

9:00 Types of Food Discussion

9:30 Calorie farming/Growing Your Own Diet: Nutrition and Calories from a Farming Point of View (review and deepening)

10:45 Introduction to Nutrition, including Soybeans Example

11:15 Food and Culture Discussion

12:30 Meal/Rest Break

2:00 Base Mapping Overview and Activity

3:15 GROW BIOINTENSIVE Diet Design

4:15 Booklet #31, **Form 3**: Diet Crop Preliminary Worksheet

5:00 Class over

Check Your Understanding:

1. Up to how many times the calories can be grown per unit of area and time with *different* calorie and carbon (60%) crops?
2. What is the criteria for a “Calorie Crop”? What are 5 examples? p. 41 and Endnotes 3-7
3. What is the maximum weight of food a woman can generally eat? The weight range of food she would prefer to eat? What is the maximum weight of food a man can generally eat? The weight range of food he would prefer to eat?

◆ [Homework]

- Tuesday Evening When Watering: [Meditation] How would you manage if you needed to grow all your own food tomorrow?
- Complete Base mapping Activity
- Read Lab Procedure for Soil Texture and Bulk Density and Particle Density Test Lab: 3-Day Workshop Manual: Soil Preparation: pp.. 2..13-2.14 both sides:
- Complete Booklet #31 pg. 10 - **Form 3**
- Watch “Choosing Your Crops”: GB DVD Part 8A and B: <https://johnjeavons.org/video.html/>
- Complete this week’s Observation Activity
- Journal entry: What have I learned, what am I confused about, what do I want to learn next week?

Class 11
Tuesday, June 16, 2020

Soil Texture and Structure and Skills for Teaching, Diet Design

Class 11 Materials:

- **Bklt. 32, Form 6**
- **Bed Crop Months Information Sheet: Planning Section of 3-Day Workshop Manual**
- **Bed 21, 16-Year: 2004-2019 and Ongoing Test: Comparison of Results of Use of Cured 30:1, 45(40):1, 60:1 and Spontaneously-Built (Note) Compost to Grow Calories With 60% and 30% Crops – Key for 3/4 of World Population**
- **Carbon/Organic Matter Cycle Simplified: *Future Fertility*, p. 13**
- **Basic-Level GB Closed Loop Sustainable Certified Teacher Prerequisites**
- **Corn Dry Matter Carbon Production**
- **6 Forms of Carbon**
- **Adsorption**

Deepening Your Knowledge: + 0.05, 0.1 Water/100 sq ft.

Bed 21

Micro Mites,

Shade Netting, and Equivalents

Soil Texture and Structure

Alfalfa Micro Study

Building Your Project:

Tools for Teaching Micro Classes

Time Management

Diet Design Starting with What You Like to Eat

Site Analysis and Micro-Climates, Natural and Created

8:30 Group Check-In and Questions, Including: Personal Calorie Estimates, Design from the Heart Redesigns, One Bed Unit Redesigns, Ten Year Goals, Eating Experiences With Weighing Your Diet for a Day

10:00 Alfalfa Mini Class

11:00 Introduction to Soils: Texture, Structure, Bulk Density and Particle Density, CEC, pH, SOM

11:30 Activities:

☐ Soil texture by feel Experiences

12:00 Teaching Strategies in Home Countries

12:30 Meal/Rest Break

2:00 Teaching Strategies in Home Countries (continued)

3:00 Tools for Teaching

3:30 Diet Design Continued: Bklt. 32, p.15, **Form 6:** Initial Diet Design

5:00 Class Over

Check Your Understanding:

1. What is the difference between texture and structure?
2. What elements create Soil Structure?

[Homework]

- Practice Soil Texture by feel with a different soil, record your results
- Complete Particle Density and Bulk Density Reflection
- Organic Matter Cycle? Complete **Form 6**: Initial Diet Design
- Complete this week's Observation Activity
- Journal entry: What have I learned, what am I confused about, what do I want to learn next week?

Class 12
June 23

Class 12: Soil: Organic Matter, Cation Exchange Capacity

Further Conceptual Design

Leek Mini-Class

Reflections on Form 6

Class 12 Materials:

- **Soil/CEC Informaion ppt:**
- **Complete Closed-System Mini-Farm:**

8:30 Group Check-In and Questions + Review of Homework

9:30 Advanced Organic Matter: Mature and Immature + Water

10:00 Soil ppt., including CEC

11:00 Magnet metaphor for understanding CEC — Cation Exchange Capacity — relationship to soil surface area and nutrient cycling. The Factors that Influence these things and the relationships among them, CEC, pH and Organic Matter Percentage

12:30 Meal/Rest Break

2:00 Leek Mini-Class

3:00 Complete Closed-System Mini-Farm

4:00 Look at **Form 6** / Make modifications as a group

5:00 Class Over

Check Your Understanding:

1. How are Organic Matter, Humus, Organic Materials and Compost different?
2. What is CEC and how does it affect your soil and the way plants grow?

[Homework]

Eat the diet you designed in Form 6 for one meal, and two days later for one day.

Complete this week's Observation Activity

Journal Entry: What have I learned, what am I confused about, what do I want to learn next week?

Class 13
June 30

Gardening as a System and Building Your Project Vision

Class 13 Materials:

- **Soul of Soil (leading to the miniaturization of farming/agriculture; www.johnjeavons.org Blog**
- **MacroInvertebrates**
- ***Microbial Community***
- **Dry Matter Production:**
- **Roots:**
- **30:1 (2/3), 45:1 (1/6), 60:1 (1/6). www.ecologyaction.tv: Compost Talk: John Jeavons: last 25 minutes**
- **Water/lb., Water/diet: Talk during class**
- **Ecology Action Booklet 31, updated December 2016:**
- **Learning during 3 months**
- **Willits Insect Life**

8:30 Group Check-in, Questions

9:00 Homework Review, including Eating of Designed Diet Experiences

10:00 Macroinvertebrates

11:15 Microbial Community,

12:30 Meal/Rest Break

2:00 Form 6 Reflections

3:30 Mini-Class: Maize/Corn

4:00 Form 6 Changes Based on Diet Experience

5:00 Class Over

[Homework]

- Complete this week's Observation Activity
- Journal Entry: What have I learned, what am I confused about, what do I want to learn next week?

**Class 14
July 7**

Understanding and Growing Compost

Class 14: Understanding and Growing Compost

**Tuesday, July 7, 2020
8:30 AM-5:00PM Pacific Daylight Time (PDT)**

Class 14 Materials

Booklet 31, Form 5

Booklet 31, Page 7, 1 and 2

Deepening Your Knowledge:

Compost Carbon Farming
Eat Diet for Lunch,
BCM,

Pests

Building Your Project:

Choosing Crops for Compost
Experience + Knowledge: ***Finalizing Diet Design***

8:30 Group Check-In and Questions

10:00 Carbon Farming

10:30 Compost!

12:30 Meal/Rest Break

2:00 Understanding Carbon: Nitrogen ratios in microorganisms, soil and

compost.

3:15 Mini-Class: Sweet Potatoes

3:45 Work through **Form 5**: Compost Crop Preliminary Worksheet — and — **Form 7** (1) and (2): Diet Design

5:00 Class Over

Check Your Understanding:

1. Why do we need to grow food for the microbes and soil?
2. What is the criteria for a “Carbon crop”? What are 5 examples?



[Homework]

- Watch on Vimeo: Steve Moore-Farm Marketing Approaches <https://vimeo.com/ondemand/ecologyaction/>
- Provide written answers to “Check Your Understanding’ questions
- Complete this week’s Observation Activity
- Journal entry: What have I learned, what am I confused about, what do I want to learn next week?
- Bring to class next week a sample of something with a high C:N ratio and something with a low C:N ratio, Observation Activity.

Class 15
July 14

Compost and Mini-Farm Income

Class 15 Materials:

- 3-Day Workshop Manual, Compost Lecture Notes, All 6 pages.
- **Booklet 31, Form 8**
- **3-Day Workshop Manual, Income Section, All pages**

Deepening Your Knowledge:

Compost Continued.
Eat Diet for Lunch, Calories, Calcium Protein Sustainability

Building Your Project:

Mini-Farm Income

8:30 Group Check-In and Questions

9:30 Follow Calcium, Nitrogen, Carbon, and Iron through several different systems

10:00 Review: Relating Calorie and Carbon farming-60/30/10

10:30 Mini-Class 4: Tomatoes and Tomato Seeds

11:00 Farm Marketing Brainstorming - Using 3-Day Workshop Income Section pages

12:30 Meal/Rest Break

2:00 How to Choose Income Crops - Using Income Calculation pages and Flower Income

pages, plus Reflect on Seed Income Crops and Approaches

4:00 Mini-Farm Income + **Form 8**

5:00 Class Over

Check Your Understanding:

1. What is the basis upon which all life on the Earth depends?
2. Qualitatively, how do root-based, plant-based, and manure-based composting differ? How are hot, cool, and cold composting different—in temperature, time required for cured compost and amount of cured compost produced?
3. In detail, what are the 3 easiest ways to increase “compost power” per unit of area and time?
4. What are the 2 most important ways in which this can reduce the challenge noted by the UNFAO that between early 2016 and late 2025, just 5.5 years from now, up to 5.5 billion people, ~3/4 of the World population may not have sufficient water to grow any food or sufficient food?

[Homework]

- ♦ Watch on Vimeo: John Jeavons-Fertilizers <https://vimeo.com/ondemand/ecologyaction/117859601>
- ♦ Provide written answers to “Check Your Understanding” questions
- ♦ Complete this week’s Observation Activity
- ♦ Journal Entry: What have I learned, what am I confused about, what do I want to learn next week?
- ♦ [Readings from *Test Your Soil with Plants*]
- ♦ **Create Farm Marketing Idea Plan, Prepare to Share**

Class 16
July 21

Sustainability: What is it and how do we track our own?

Perspective: Full Sustainability means only obtaining organic matter and organic nutrients from the growing beds for diet, compost and income that receive those inputs. It also means only marketing crops from 1% or 2% to 10% of the total of these growing beds. The Goals, in Priority Order of GROW BIOINTENSIVE(R) are: To Grow: Soil, Diet, Thriving Healthy Local Ecosystems and, then, a modest income.

• **Class 16 Materials:**

• **Organic Farming History:** *Culture and Horticulture* by Wolf Storl, Published by Biodynamic Literature. 1979. pp. 5-28, and 29-91.

• **Biointensive History:** *Intensive Gardening Round the Year*, The Setphen Green Press, 1981. Selected pages.

• **Yields and Quality of Soil Perspective:** Roger Ravelle Sept. October, 1976 *Scientific American* Article.

See <https://www.dropbox.com/sh/xu8b6pm7tcjgw7l/AADZCArn-QLlwB8XXDmpLfVSa?dl=0>.

• **Relating Sustainability to CEC, SOM, pH and Nutrient Cycling**

- Compost in the Tropical Climates:
- Composting in the Tropics
- **Soil Testing Evaluation:**
- Fertilizer Recommendations for EA-TJC by Grow Your Soil
www.growyoursoil.org
- *Test Your Soil with Plants*, pgs 12, 82-84, 93, 124, 139, 162

Transforming Human Waste:

- *Future Fertility — Transforming Human Waste into Human Wealth*, pg 40-41

Reflections: 2% increase in Root Health: :2 to 4 x yield. Wheat: 25x seed/area in AZ highest US Yield, Roger Ravelle Sept. October, 1976 *Scientific American* Article. Organic and Biointensive Farming History. Doubling of seeding/Acre in chem ag Wheat ~20% increase in yield, decrease in protein. In JSA JJ article, Increase in seeding results in increase in seed, **and** biomass yield with GB. Also, protein amount. Soft-eye Observation: Nematodes. Black Spot examples.

Background: Farming, Organic, Biointensive and Chemical Histories. Favas: Immature + N in Soil/Interplant. Planning 8/1. Root is the controlling part of the plant. Symptoms vs. Causes.

Deepening Your Knowledge: Sustainability continued: Nitrogen, Human Waste Recycling

Building Your Project: Soil Testing and Results. Testing Your Soil with Plants.

8:30 Group Check-In

9:30 Nitrogen

10:00 Human Waste Recycling Practical Approaches in Your Country

12:00 Mini-Class: *Sunflowers*

12:30 Meal/Rest Break

2:00 Soil Testing and Results

3:15 Testing Your Soil with Plants

4:30 Relating Sustainability to CEC, SOM, pH and Nutrient Cycling

5:00 Class Over

[Homework]

- Watch on Vimeo: Operational Seed Security Systems with Samuel Nderitu <https://vimeo.com/ondemand/ecologyaction/117342281>
- Study Session this week- Review Form 5 and Form 7, make corrections
- Watch Self-Teaching Mini-Series Part 7: Saving Seeds <https://johnjeavons.org/video-html/>
- Provide written answers to “Check Your Understanding” questions
- Complete this week’s Observation Activity
- Journal Entry: What have I learned, what am I confused about, what do I want to learn next week?

Class 17
July 28

Life in the Mini-Farm. Workshops. Farming Business and Income. Farming Leadership. Crop Study

Class 17 Materials:

• **Training:**

• **Positive GB Experience in India Under Challenging Conditions in India - Lack of Experience, Poor Soil and Poor Fertilizer**

• **Under Drought Conditions in India:**

8:30 Group Check-In and Questions

9:00 Life in the Mini-Farm

10:00 Experiences in India Under Challenging Conditions

11:00 Workshops: James and Sharon at their GB Center in British Columbia, Canada have developed a new approach they are going to try in 2020: "We are developing a multi-week workshop series that will begin with a private tour in the fall, followed by multiple classroom sessions over the winter (garden placement and design, diet design, using the master charts etc), skill building sessions at our site in the spring, soil testing, analysis and amendment recommendations, and continued workshops throughout the 2021 season demonstrating double digging, flatting, transplanting and other skills needed to succeed with GB. This series is a combination of classroom work, 8 principles, skill building, demonstrations, as well as our consultation services (soil testing, site selection, and ongoing support). Our intention is to attract a group of 5 individuals who wish to start a

garden, and provide them with the skills and confidence needed to be successful. The cost of the series hasn't been decided."Website: www.growsustainability.org

What kind of Workshops do you want to use for teaching?

12:30 Meal/Rest Break

2:00 Farming Business and Income: What kind of Combinations do you want to use?

3:15 Farming Leadership: What Types Work Best?

4:30 Mini-Class: 3 Kinds of Green Peas: Green Peas, Snap Peas and Snow Peas

5:00 Class Over

[Homework]

Complete this week's Observation Activity

Garden Manager for a Day

Study Session-Complete **Forms 9(3) and 9(4)**

Journal Entry: What have I learned, what am I confused about, what do I want to learn next week?

Class 18:

September 1

Revisiting Core Concepts

Class 19 Materials:

- **Booklet 31: Form 9 (1) and 9(2)**

Deepening Your Knowledge:

Double-Digging

Intensive Planting

Building Your Project:

Companion Planting and Crop Rotations

Mini-Farm Design Continued

8:30 Group Check-In, and Questions

Taking It Deeper:

9:30 Double-Digging/Deep Soil Structure Preparation

10:00 Intensive Planting

10:30 Companion Planting

11: 30 Crop Rotations

12:30 Meal/Rest Break

2:00 Mini-Farm Design Continued

3:00 Completion of: ***Form 9 (1) and 9(2)***

4:00 Mini-Class: Jerusalem Artichoke

4:30 Homework Reflections

5:00 Class Over

[Homework]

- Watch on Vimeo: Jake Blehm-Insect Life (w/ Steve Moore and John Jeavons)
- Provide written answers to “Listen for Understanding” questions
- Worksheet: Sunlight/shade needs of plants-List: What plants in your region love shade? Which prefer sun? Are there any that like hot temperatures but not direct sun? Draw a diagram of how you might plant two of these plants to compliment each other?

Review or Look-up the **first and last soft and hard frost dates/first and last light and heavy rain dates** for your home growing region

- Complete this week’s Observation Activity: plant and water data bed with different spacing and observe several days in a row.
- Study Session this week- Review and Revise: ***Form 9 (1) and 9(2)***

· Journal Entry: What have I learned, what am I confused about, what do I want to learn next week?

Class 19

September 8

Class 20

All About Seeds.

Tools. Challenges. Gardening System. Project Vision.

Crop Study.

Class Materials: Booklet 13

8:30 Group Check-In. Questions

9:00 All About Seeds with Matt Drewno, Victory Gardens for Peace Mini-Farm Manager for over 10 Years, Vice President of Ecology Action

- Use of Open Pollinated Seeds
- How to Collect and Save Seeds\
- Planning for Seed Saving
- Seed Banks

12:30 Meal/Rest Break

2:00 Tools for Mini-Farming

2:45 Challenges

3:30 Gardening System

4:00 Project Vision

4:30 Mini Crop Study: Sunn Hemp

5:00 Class Over

[Homework]

- 📄 Watch on Vimeo: ***Low Natural Rainfall Farming*** with John Jeavons: <https://vimeo.com/ondemand/ecologyaction/117878692?autoplay=1>
- 📄 Provide written answers to “Listen for Understanding” questions
- 📄 Complete this week’s Observation Activity.
- 📄 Journal entry: What have I learned, what am I confused about, and what do I want to learn next week?

Class 20

September 15

All About Weeds.

Big Perspective, Local Action—What are our challenges globally and What do we do about it?

Gardening as a System and Building Your Project Vision. Putting all the Pieces Together.

8:30 Group Check-In. Questions

9:00 All About Weeds with Matt Drewno, Victory Gardens for Peace Mini-Farm Manager for over 10 Years, Vice President of Ecology Action

12:30 Meal/Rest Break

2:00 Big Perspective, Local Action—What are our challenges globally and What do we do about it? Discussion.

3:30 Gardening as a System and Building Your Project Vision. Putting all the Pieces Together.

5:00 Class Over

[Homework]

- Provide written answers to “Listen for Understanding” questions
- Complete this week’s Observation Activity
- Journal entry: What have I learned, what am I confused about, and what do I want to learn next week?

Class 21

September 22

History of Farming, Gardening and Biointensive with Matt Drewno.

Expanding Your Possibilities: Season Extension, Real Data and Planning Practice

Class Materials: Watch in Advance: Greenhouses and Season Extension with Steve Moore at: www.ecologyaction.tv

8:30 Group Check-In and Questions

9:00 History of Farming, Gardening and Biointensive with Matt Drewno, Victory Gardens for Peace Mini-Farm Manager for over 10 Years, Vice President of Ecology Action

Expanding Your Possibilities:

11:00 Season Extension

11:30 Real Data at the End of the Season

12:00 Planning Practice

12:30 Meal/Rest Break

2:00 Planning Practice Continued

4:00 Any questions about upcoming presentations, diet design and overall garden planning, etc.

5:00 Class Over

[Homework]

- **Complete this week's Observation Activity**
- **Journal entry: What have I learned, what am I confused about, what do I want to learn next week?**

Class 22

September 29

Victory Gardens for Peace — The History and Future With Matt Drewno

Trees

Introduction to Arid and Natural Rainfall Farming

8:30 Checkin and Questions

9:00 Victory Gardens — The History and Future with Matt Drewno, Victory Gardens for Peace Mini-Farm Manager for over 10 Years, Vice President of Ecology Action

11:00 Trees:

- Temperate, Tropical, and Arid
- Yields in Calories and Biomass per Unit of Area and Time + Coppicing
- How to Prepare Planting Hole
- How to Best Fertilize
- Sustainable Firewood for Heating, Cooking and Pest Control per Unit of Area + Reduced with Type of Stove: Lorena/Clay and Rocket/Metal
- Filberts/Hazelnuts vs.. Almonds
- Bananas, Mesquite, Brazil Nuts, Other

Reflections:

- If there is one thing that has become clear in the past few months, it is that we humans are not separate from nature – we are very much part of what happens on, and to, the planet. As billions across the globe endure a

lockdown to stop the spread of COVID-19, scientists and doctors are warning that “...deforestation may be creating an accidental laboratory for the emergence of new viruses in environments that have been disturbed by humans.” ([Forbes](#)) And that “Habitat destruction threatens vast numbers of wild species with extinction, including the medicinal plants and animals we’ve historically depended upon for our pharmacopeia. It also forces those wild species that hang on to cram into smaller fragments of remaining habitat, increasing the likelihood that they’ll come into repeated, intimate contact with the human settlements expanding into their newly fragmented habitats. It’s this kind of repeated, intimate contact that allows the microbes that live in their bodies to cross over into ours, transforming benign animal microbes into deadly human pathogens.” - [The Nation](#)

- For decades – generations, even – humans have lived on a kind of “credit”: slashing and burning wildlands of the planet to support an agricultural model that is based on the availability of an endless supply of natural resources. As the impacts of climate change have begun to reverberate across the globe – COVID-19 being the most dramatic example, but by no means the most dangerous one – we are seeing evidence that this way of life cannot be sustained. And for decades, forward-thinking people have been doing what they can to mitigate the damage and pay down our debt to nature. Sometimes it seems like the challenge is too great for one person – or even a group of people – to fix. And it is true that the lion’s share of responsibility for the planet’s problems goes to large organizations, and nations.
- We should remind ourselves that it is very possible for seemingly small personal actions to have an enormous positive effect on the world.

Example:

- [Lhomme-qui-plantait-des-arbres.jpg](#)>In the early 1950’s, Jean Giono of France wrote: *L’homme qui plantait des arbres* (*The Man Who Planted Trees*). Englishman Richard St. Barbe Baker, who reportedly inspired the planting of as many as 26 trillion trees in his lifetime, was the first person to translate it into English. While the story is fiction, it is based on reality — what has been accomplished

in parts of the world and can be done again. Around 1967, French Canadian animator Fredrick Back (1924-2013) created an animation based on the book, called *The Man Who Planted Hope and Grew Happiness* over 20-year period — one frame at a time. The resulting 30-minute short was released in 1987 and won an Academy Award for Best Animation. The video is wonderful, hopeful, and a fantastic inspiration! Every time I watch the it, tingles of happiness go up my spine.

- Described accurately on the cover, *“It is the story of a solitary shepherd who patiently plants and nourishes a forest of thousands of trees single-handedly transforming his arid surroundings into a thriving oasis. Undeterred by two World Wars, and without any thought of personal reward, the shepherd tirelessly sows his seeds and acorns with the greatest care. As if by magic, a barren landscape grows green again. A film of great beauty and hope, this story is a remarkable parable for all ages and an inspiring testament to the power of one person.”* The Los Angeles Times calls it, *“A masterpiece of the animator’s art”*.

- Since we cannot avoid it, I like to re-frame this lock-down in my mind, not as a time of fear or lack of connection, but as a fallow time, which we can use to examine what is most important and to grow our roots – our connections to our planet, to our fellow humans, to our beautiful and resilient ecosystems, to our best selves – strong and deep. When we finally come back together, I hope it will be to take part in a paradigm shift that takes us into a new era of truly sustainable progress, in which we all “plant trees” – either literally, or figuratively – to bring our lives back into harmony with nature. In the meantime, this small, elegant film is an inspiration for us to become the change we all want to see in the world. I hope you watch it, and that it brings you joy.

- English: <https://www.youtube.com/KTvYh8ar3tc>

Spanish: <https://youtu.be/XXIkF1XqU-8>

French: <https://youtu.be/iwU85WUZPqk>

- *The Simple Act of Planting a Tree: Healing your Neighborhood, Your City, and Your World*, Tree People, 1990

12:30 Meal/Rest Break

- Introduction to Arid and Natural Rainfall Farming:

Deepening Your Knowledge:

Soil hydrology/Advanced Watering

Arid Farming/Watering Techniques

2:00 Advanced Watering/Arid Farming/Watering Techniques

2:30 Soil Hydrology

3:00 Turning a Diet Design into a Garden Plan

5:00 Class Over

Check Your Understanding:

1. What key soil element is increased by overhead watering and what key skill is developed?

[Homework]

- Complete this week's Observation Activity
- Journal entry: What have I learned, what am I confused about, what do I want to learn next week/
- Complete Garden Plan Exercise

Class 23

October 6

Trees

Low Natural Rainfall and Arid Farming

8:30 Group Check-In. Questions

9:00 Victory Gardens History and Future with Matt Drewno, Victory Gardens for Peace Mini-Farm Manager for over 10 Years, Vice President of Ecology Action

11:00 Trees:

- Temperate, Tropical, and Arid
- Yields in Calories and Biomass per Unit of Area and Time + Coppicing
- How to Prepare Planting Hole
- How to Best Fertilize
- Sustainable Firewood for Heating, Cooking and Pest Control per Unit of Area + Reduced with Type of Stove: Lorena/Clay and Rocket/Metal
- Filberts/Hazelnuts vs.. Almonds
- Bananas, Mesquite, Brazil Nuts, Other

12:30 Meal/Rest Break

2:00 Low Natural Rainfall and Arid Farming

- World Perspective
- Soil hydrology
- Advanced Watering 36-Inches Deep + Ultra Perspective
- Water Catchment Systems
- Arid Farming 20-Inches of Water “Needed” for Highest World Yields
- Soil Water Holding Capacity
- Cultivation Techniques

References:

- *Dry Farming*, J.A. Widsoe, MacMillan 2020
- *Food From Dryland Gardens*, David Cleveland and Donella Solari, Center for People, Food, and Environment, 1991
- *Trees for Arid Regions*
- HTGMV2017 Bibliography, www.growbiointensive.org/bibliography, Thousands of entries on all topics, including Trees
- *The Man Who Planted Trees*, johnjeavons.org: WORLD OF HOPE – DIGGING DEEPER #16: THE MAN WHO PLANTED TREES

Reflections:


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- For example:

-  In the early 1950’s, Jean Giono of France wrote: *L’homme qui plantait des arbres* (*The Man Who Planted Trees*). Englishman Richard St. Barbe Baker, who reportedly inspired the planting of as many as 26 trillion trees in his lifetime, was the first person to translate it into English. While the story is fiction, it is based on reality — what has been accomplished in parts of the world and can be done again. Around 1967, French Canadian animator Fredrick Back (1924-2013) created an animation based on the book, called *The Man Who Planted Hope and Grew Happiness* over 20-year period — one frame at a time. The resulting 30-minute short was released in 1987 and won an Academy Award for Best Animation. The video is wonderful, hopeful, and a fantastic inspiration! Every time I watch the it, tingles of happiness go up my spine.

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- *The Simple Act of Planting a Tree: Healing your Neighborhood, Your City, and Your World*, Tree People, 1990

Check Your Understanding:

- What key soil element is increased by overhead watering and what key skill is developed?

[Homework]

- Complete this week’s Observation Activity
- Journal entry: What have I learned, what am I confused about, what do I want to learn next week
- Complete Garden Plan Exercise

**Class 24
October 13**

Arid and Natural Rainfall Farming ppt.

Expanding Your Possibilities: Season extension, fundraising, real data and planning practice

Deepening Your Knowledge:

Greenhouse as Season Extension

Herbs in a Grow Biointensive System

Building Your Project: Planning and Crop Rotation Continued

Fundraising: Do you need to and How?

Compiling Data: At the End of the Season

8:30 Group Check-In

9:00 Arid and Natural Rainfall ppt.

10:30 Planning and Crop Rotation Continued Discussion

11:30 Compiling Data at the End of the Season

12:00 Greenhouse and Season Extension Discussion

12:30 Meal/Rest Break

2:00 Fundraising: Do you need to and How

3:00 “Elevator Speech” Game

3:45 Herbs in a Grow Biointensive System

4:45 Any questions about upcoming presentations, diet design and garden planning.

5:00 Class Over

[Homework]

- Complete this week's Observation Activity
- Journal entry: What have I learned, what am I confused about, what do I want to learn next week?

Class 25
October 20

Reflections-what have you learned and new horizons to explore

Deepening Your Knowledge:

Crop Personality/Research Project presentations

Test Your Understanding Opportunity

Reflections/Group Exit Interview

8:30 Group Check In

10:00 Research Project Presentations

12:30 Meal/Rest Break

2:00 Test Your Understanding Opportunity

3:00 Reflections/Group Exit Interview

4:30 Q & A for review

5:00 John's Reflections

5:30 Class Over

[Homework]

- Study for Test Your Understanding Opportunity
- Prepare for presentation
- One on one exit interview with your garden manager
- Bklt 30: Sustainable Mini-Farm Certification Program
- Submit all forms from Bklt 31***

Class 26

October 27

Workshop Planning and Design Revisions and Certification Development

—35 Days to Final Presentations! —

-Refer to One-Page Information Sheet of What Needs to be Included-

Submit:

- Completed Bklt 31 Forms if necessary***
- 1-Day Workshop Outline**
- Submit Bklt 30: Candidate Profile, Teacher goals, and Data Reporting Example***
 - Submit Bklt 30: Summary Yield Data Example, Planned Garden Map, and Proposed Garden Plan**

Materials and Information for Certification:

- Individual Data Reports for main season crops
- Summary Yield Data Form, including crop failures
- Teaching Report Forms
- Summary Teaching Report
- Certification Candidate Profile
- Annual Teacher Goals Report (Two months prior to main growing season)

- Garden plan
- Map of garden showing all beds and corresponding crops, areas, bed numbers, paths and other distinguishing factors, including path sizes
- Grow Your Soil Soil Test and Evaluation or alternative approved by Ecology Action

Class 27

November 3

Class Discussions as Participants Develop Their Presentations

Class 28

November 10

Class Discussions as Participants Develop Their Presentations

- **Each Participant Send in Copy of Full Presentation Materials to All Other Participants -**

Class 29

November 17

**10 Presentations and Presenter Feedback
-About 45 Minutes Each-**

Class 30

November 24

**10 Presentations and Presenter Feedback
-About 45 Minutes Each-**