

2015 Oregon School Garden Summit

January 30, 2015

Carter Latendresse

Sixth Grade English Teacher & Garden Coordinator

Catlin Gabel School in Portland

Case Studies:

School Garden Programs Around Oregon



Catlin Gabel School Logistics

- Independent preK - 12 school of 750 students on 55 acres in Portland
- Three organic gardens (2,000 sq. ft.); 40-tree apple orchard; apiary of three hives
- SES demographic barbell-shaped: upper-middle class bulge and working class scholarship bulge, but middle class not well represented among students
- Ethnic demographic: 30% students of color

Catlin Gabel School Logistics



Logistics: Year One, 2008 - 2009

- **Founding Garden & Beekeeping Club Members (Feb. 2009): BS, LS, MS, US, IT, Cafeteria, Facilities**
- **Garden Club met twice a month: agendas and minutes posted online**
- **Three year itemized budget and drawing presented to board of trustees**
- **Students help design, build, & install: 5 beds, trellis, benches built, garden shed, greenhouse, drainage, irrigation, 3 cold compost bins**

Logistics: Year One, 2008 - 2009

Garden &
Beekeeping Club
met twice a month:
agendas and
minutes posted
online

Garden Club Minutes February 4, 2009 Meeting

In attendance: Joanne, Betsy, Mike Moran, Eric, Tom, Aiyana, Jackie, Daisy, Bob, and Carter

Notes sent to above: Theresa Long, Mike Wilson, Paul Andrichuk

Notes by: Carter

1. Getting Started

The garden concept has been approved! Eric Shawn from Facilities and Mike Moran from Development were here to talk about first steps. To start the garden, we have to draw up a design, write up a budget, begin articulating how it relates to curriculum in each division, and write up a timeline. Once all this is done, Carter will take it to Mike Moran, Theresa Long, Mike Wilson, and Eric Shawn. We'd like to have the beds built and plants in the ground this spring. Mike Moran would want to get us some money as early as this spring. Larger money, as in an endowed fund of some sort, will not be possible for this spring, but will be available next year.

2. Moodle

Post Ideas to Moodle/Groups/Grow, Harvest, Cook/Discussion Forums for Feb 10, Tuesday meeting, 3:30 PM

Budget: Daisy, Aiyana, and Carter
Design: Jackie, Tom, and Bob
Curriculum: Carter, Joanne, and Betsy

We'll set up planting sequence on moodle next meeting. Jackie will bring her planting calendar. This Moodle site will be helpful to Mike Moran when he is asking for donations.

3. Budget

Daisy, Aiyana, and Carter will contribute to this moodle forum. Daisy and Aiyana are taking the lead in shaping the budget.

When done, we will send our budget to Mike Moran as soon as possible. He needs to know the following: Item? Cost? One time expense? Every year? Ground Staff time involved? Garden Club staff time involved (include *everything*, like summer time driving to campus, time weeding, time building raised beds, and time for teachers writing curriculum)?

Also, if possible, break out budget year-by-year, so that it articulates what we need to start this year, what we'll need in year two, what we'll need in year three, and so on.

We brainstormed a list of budget items that included the following: shed greenhouse; roof, lumber, hardware, gate material, bins; seeds; gloves; soil; compost; amendments; 4 x 10 cedar boards; 4 x 4 posts; caps for posts; nails, screws; saws; electric drills; t-squares; sharpening tools; shovels; garden forks; wheel barrows; cedar trellis; cedar fencing; cedar gates; wooden tomato cages; string; wide cedar chips for garden path; drainage materials; poles; garden felt; sculpture; bird bath; and stepping stones

4. Garden Design

Jackie, Tom, and Bob will be on the Design team.

Eric reported that Mike Wilson would draw sketch for water drainage between raised beds.

We could build cold frames for winter crops: kale, chard, spinach, broccoli, beet, carrot, salad greens, and Asian veggies.

At first, it was articulated that we should make 4 cedar raised beds (8 x 10 feet) and 4 cold frames. Could we tie the upper school shop class to the building?

5. Curriculum

Betsy, Carter, and Joanne will begin drafting broad statements on how gardening attaches to their curricula.

6. Volunteer Hours

Middle school C & C, middle school Breakaway, upper school winterims, and upper school volunteer hours next year could be tied to garden work. Community Service Coordinators in middle and upper schools are Len Carr and Mark Lawton. It would be good to have a conversation with them.

Mysignup.com will help us organize volunteer hours in the summer, as it helped Jordan and Maggie

7. Next Meeting

February 10, 2009, Tuesday, 3:30, Carter's room.

Logistics: Year One, 2008 - 2009

Three year Itemized
Budget presented to
board of trustees

GROW, HARVEST, COOK SUSTAINABLE GARDEN ESTIMATED BUDGET			
Year One (Zone 1)			
Qty	Item	Subtotal	Total
5	Raised Beds 4' x 8' x 20" in red cedar lumber 30 cedar boards at 2" x 10" x 8' 5 @ 3" x 3" x 8' 14 @ 2" x 6" x 8'	\$168.66	\$843.30
1	Trellis 4 cedar posts at 6" x 6" x 12' 8 cedar posts at 4" x 4" x 12' 6 cedar beams @ 4" x 6" x 12' 12 cedar rafters at 2" x 4" x 14'	\$761.00	\$761.00
1	Box of hardware screws	\$10.00	\$10.00
12	bags of concrete mix for posts	\$2.57	\$30.84
12	post brackets	\$15.00	\$180.00
1	box each of nuts, bolts, washers for trellis	\$50.00	\$50.00
1	Arrow Glenwood 8 X 6 Outdoor Storage Shed #ARW-GW86 http://www.elitedeals.com/	\$550.00	\$550.00
1	Fir or pine and CDX compost bin in three sections	\$150.00	\$150.00
12.5	Yards of 4-way soil from Mt. Scott Fuel Co. to fill 5 raised beds in Zone 1	\$38.00	\$475.00
5	50 pound bags of soil amendments (kelp, fish meal, bone meal, etc.)	\$40.00	\$200.00
1	unit cedar bark chips from Bark Blowers to cover 1170 square feet 4" deep in zone	\$239.00	\$239.00
8	15' Soaker hoses (one for each bed; two for grape trellis; one for herb/flower bed)	\$6.00	\$48.00
8	Apex 15-Foot Connector Hose Remnants #REM 15	\$5.98	\$47.84
30	PVC Ts and elbows	\$1.00	\$30.00
5	PVC valves	\$7.00	\$35.00
2	Dig Brand Automatic Battery operated timers for five beds, for grape trellis, and opening flower/herb bed (in zone 1) Item # TOO-3007	\$45.00	\$90.00
2	organizing bins for shed	\$35.00	\$70.00
1	roll concrete reinforcing wire for making tomato cages 48" x 50'	\$78.00	\$78.00
20	Flexible PVC poles for five beds	\$6.00	\$120.00
1	Plastic for five beds (6 mil; 14' x100')	\$150.00	\$150.00
20	Steel rebar to anchor PVC pipe	\$4.75	\$95.00

Logistics: Year One, 2008 - 2009

Three year Itemized Budget—with lumber cut list—presented to board of trustees

Here's what we would need for phase one, this year, starting within the month:

For Five Raised Beds

30 cedar boards 2" x 10" x 8'
5 cedar boards 3" x 3" x 8'
14 cedar boards 2" x 6" x 8'

For Our Trellis

4 cedar posts at 6" x 6" x 12' Rough Full Sawn at \$5.00 LF, S4S at \$5.00 LF
8 cedar posts at 4" x 4" x 12' Rough Full Sawn at \$1.58 LF, S4S at \$2.20 LF
6 cedar beams at 4" x 6" x 12' Rough Full Sawn at \$2.62 LF, S4S at \$2.50 LF
12 cedar rafter at 2" x 4" x 14' KD S1S2E at \$0.77 LF

For the Shed (updated numbers)

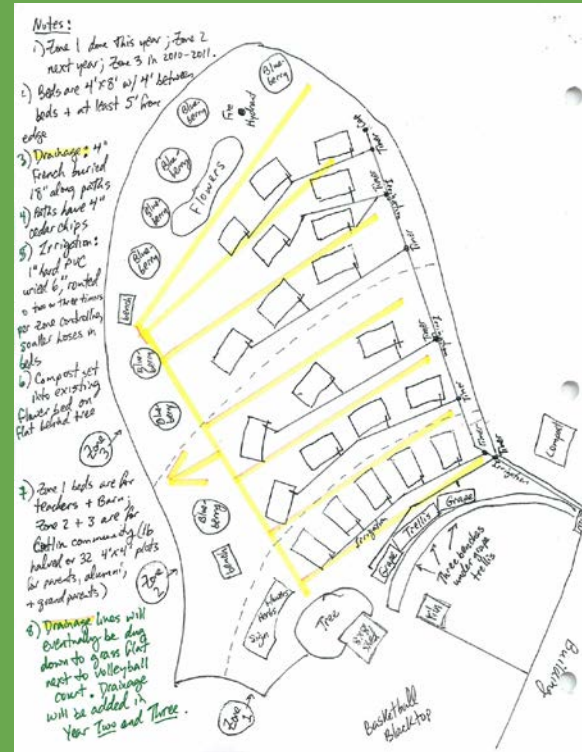
5 fir-rafters at 2" x 4" x 12'
4 CDX 3/4" thick
4 pressure treated fir posts 4" x 4" x 8'
2 fir beams 4" x 6" x 10' KD S4S at \$2.21 LF
22 fir-studs for pony wall at 2" x 4" x 8'
2 pressure treated fir-plate at 2" x 4" x 8'
enough cedar siding to cover 2 sides of a shed 4' x 8' and one side 8' x 8'
at 1" x 6" KD TK S1S2E (net s"x5-1/2") 0.63 LF

For benches (not mentioned in original estimate)

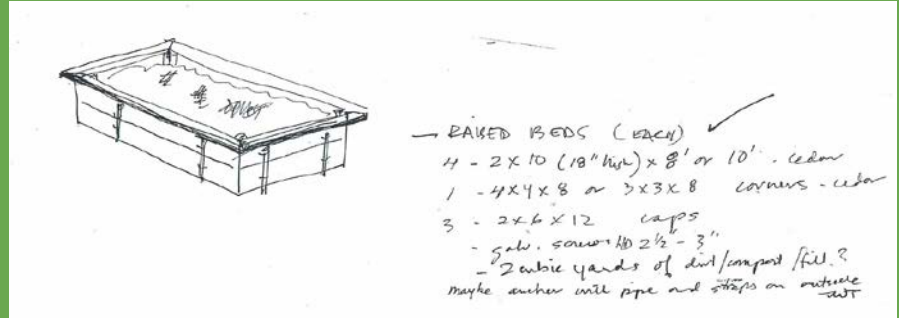
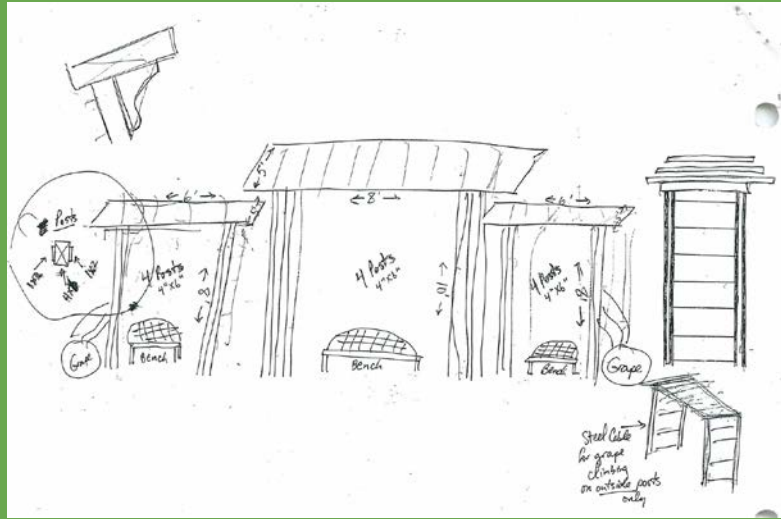
3 cedar boards at 3" x 12" x 10'

Logistics: Year One, 2008 - 2009

Three year Itemized Budget—with
initial garden design—presented to
board of trustees



Logistics: Year One, 2008 - 2009



5 beds, trellis, and benches built: We drew everything before we did any construction in our school woodshop

Logistics: Year One, 2008 - 2009

Students and teachers built and
installed raised beds together



Logistics: Year One, 2008 - 2009



Garden shed
doors being
constructed by
high school
students in the
wood shop



Logistics: Year One, 2008 - 2009



Greenhouse being
constructed



Logistics: Year One, 2008 - 2009



Photos after beds, trellis, garden shed, & greenhouse were finished

Logistics: Year One, 2008 - 2009

Water, Water, Water: A Huge Concern

1. The bill
2. The source, catchment, & reuse
3. Pressure
4. Drip irrigation with timer
5. Drainage
6. Bioswale and eventual watershed

Logistics: Year One, 2008 - 2009



Three cold compost bins installed: Garden produce is served in cafeteria and we compost back into garden. First grade does vermiculture & sixth does three cold top-loaders and one double-bin tumbler.

Logistics: Year One, 2008 - 2009



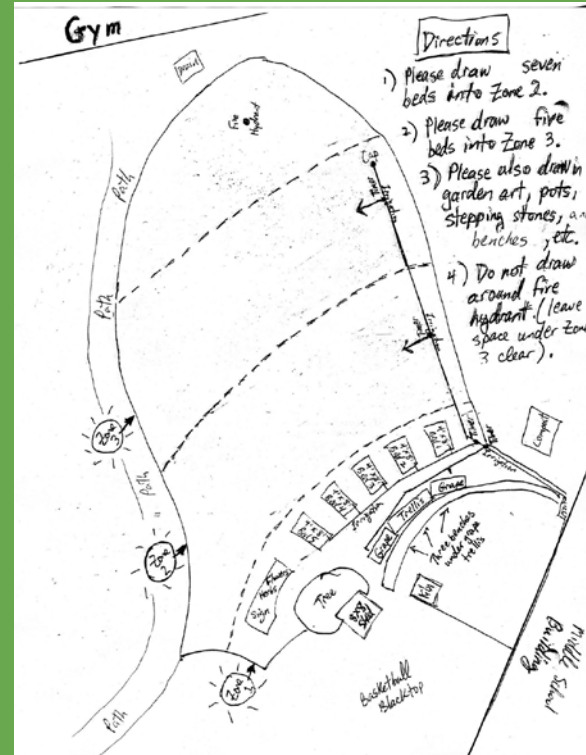
During the spring of that first year, middle school students were already teaching elementary school classes in the garden

Logistics: Year Two, 2009 - 2010

- **Students help design, build, & install: 10 more beds, another trellis, ironwork garden art, blueberry berm, & raingarden bioswale**
- **Contest #1: Student Garden Design Drawing Contest: Winner got \$25 iTunes cards**
Contest #2: Adult Garden Design Drawing Contest: adult won \$50 at Farm Cafe
- **Work Parties: Students once a month; Community on weekends; During three faculty meetings**
- **Plant Sale in spring raised \$1,000: tomatoes, flowers, squash, calendar**
- **Sixth Grade Team attended Edible Schoolyard Training in Berkeley, CA, in summer**

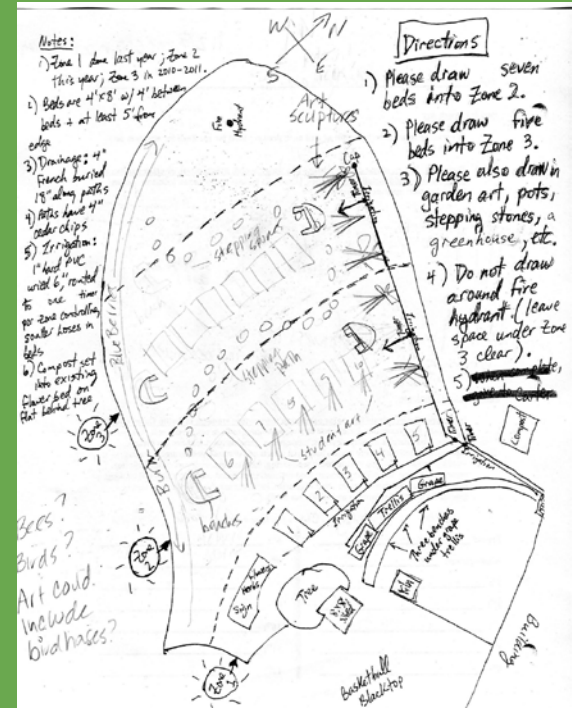
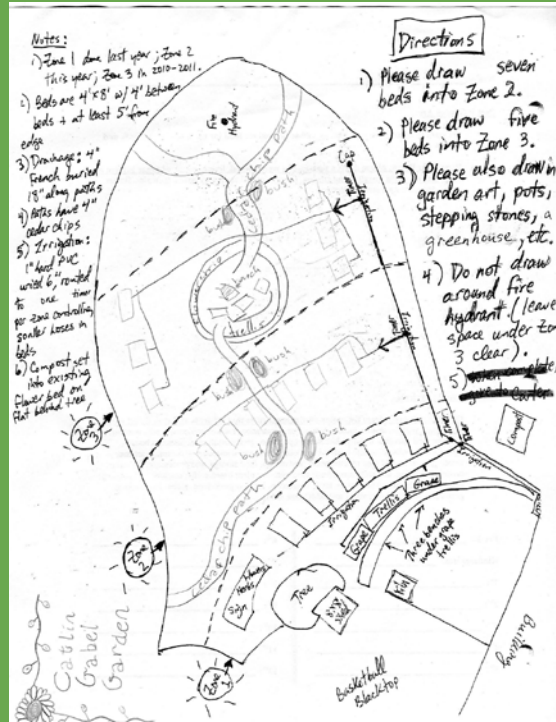
Logistics: Year Two, 2009 - 2010

Contest #1: Student
Garden Design Drawing
Contest: Winner got \$25
iTunes card



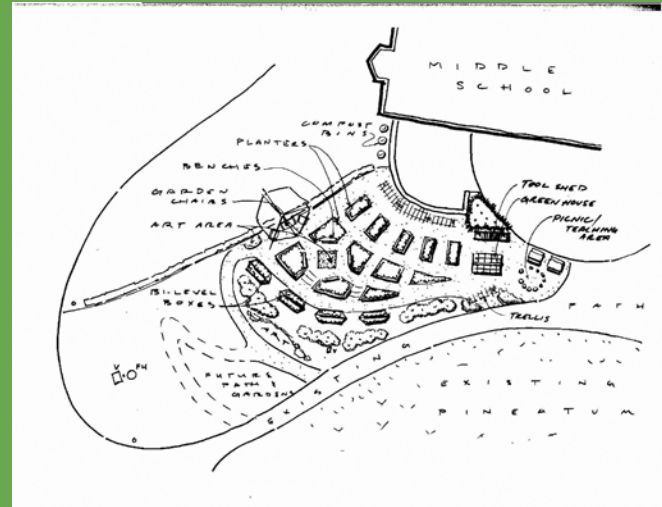
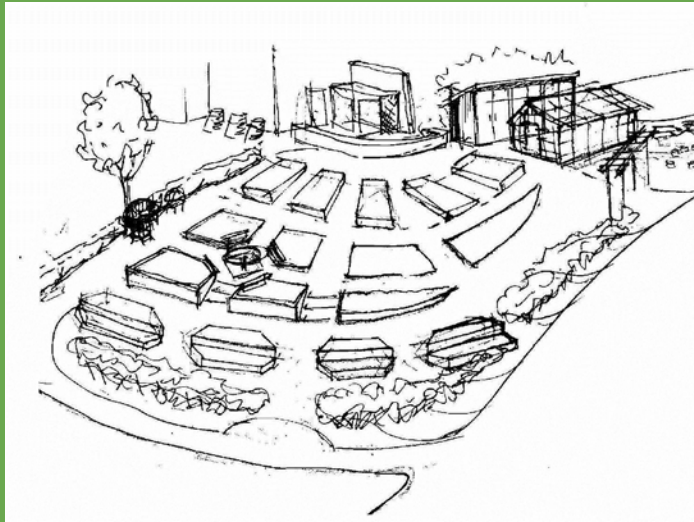
Logistics: Year Two, 2009 - 2010

Contest #1: Student
Garden Design Drawing
Contest: Winner got \$25
iTunes card



Logistics: Year Two, 2009 - 2010

Contest #2: Adult Rendering of Winning Student Garden Design: Adult won \$50 at Farm Cafe



Logistics: Year Two, 2009 - 2010

Stripping sod and digging in drainage and irrigation during year two.



Logistics: Year Two, 2009 - 2010



Student ironwork
garden art from
summer school
class



Logistics: Year Two, 2009 - 2010



Plant Sale: tomatoes, flowers, and squash starts raised in greenhouse.

Logistics: Year Two, 2009 - 2010



End of Year Two Photos.



Logistics: Year Two, 2009 - 2010

Measuring and marking rest of the hillside in preparation for years three and four.



Logistics: Year Two, 2009 - 2010

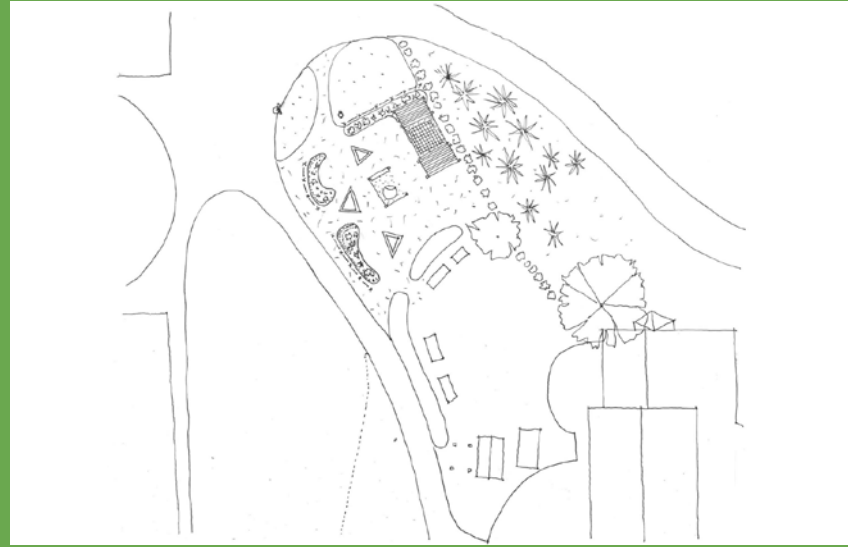
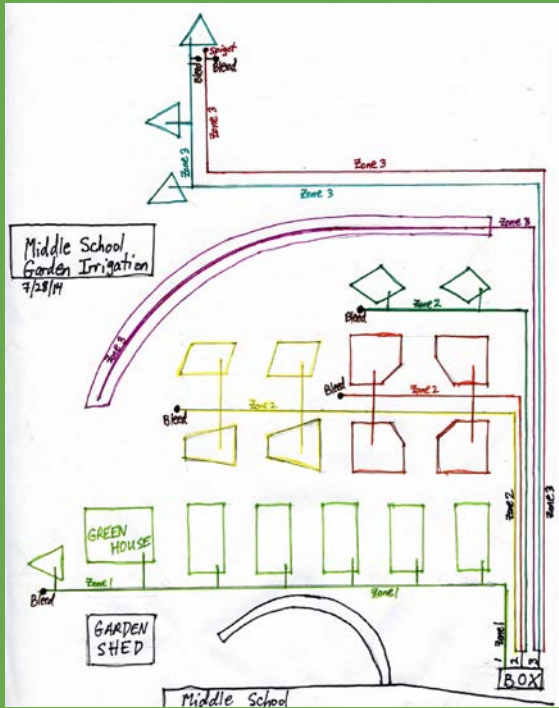
Spring of year two and autumn of year three: Digging in foundation, drainage, and irrigation into last of hill. This is the future site of the cob oven.



Logistics: Year Three, 2010 - 2011

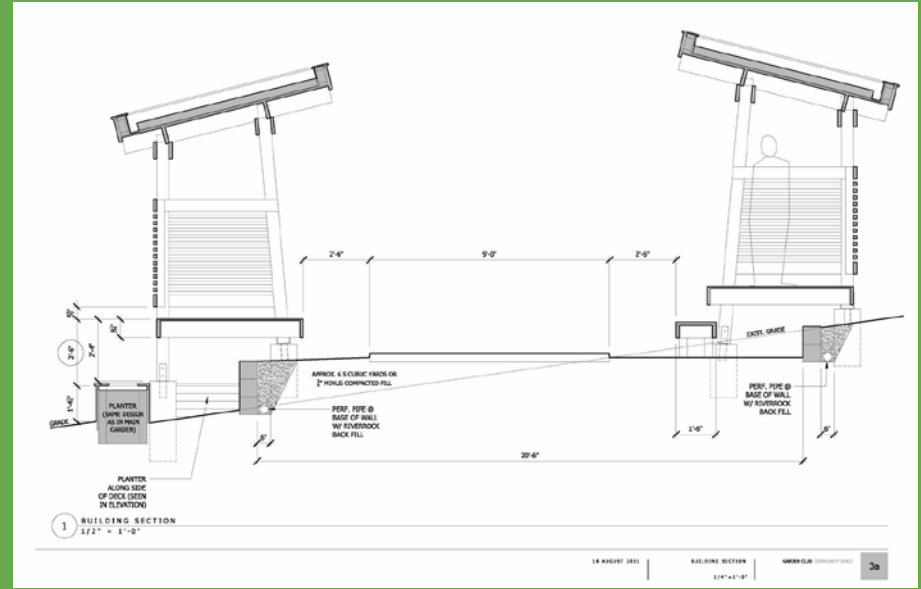
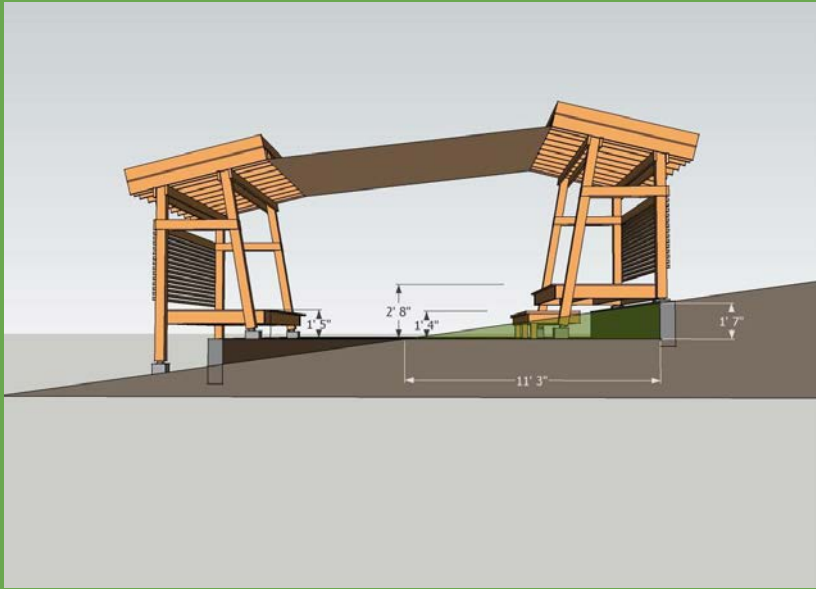
- Students help design, build, & install: final irrigation, layout of rest of garden, green roof structures, giant chess board, cob oven, 5 more beds
- Carter completed Growing Gardens School Garden Coordinator Certification Program and began earning stipend as Garden Coordinator
- Garden and Beekeeping Club wrote up overview documents: mission, vision, roles and responsibilities, year-round calendar, K-12 curriculum
- Plant sale in spring raised \$700: tomatoes, flowers, free orchid care doctor

Logistics: Year Three, 2010 - 2011



Drew up final irrigation and layout of rest of garden

Logistics: Year Three, 2010 - 2011



Plans for two green roof structures and giant chess board

Logistics: Year Three, 2010 - 2011

Constructed two green roof structures and giant chess board



Logistics: Year Three, 2010 - 2011



Constructed
cob oven



Logistics: Year Three, 2010 - 2011



Constructed cob oven

Logistics: Year Three, 2010 - 2011



Constructed cob oven

Logistics: Year Three, 2010 - 2011

Garden Master Plan

Vision: Organic food gardening in school teaches students and the community how to create a world where collaboration, healthy living habits, and environmental stewardship are norms.

Mission: The Garden club works with students and the school community to create and sustain an organic school garden and landscape that is wholly integrated into the Catlin Gabel classroom curriculum, culture, and food program. The goal is a participatory program that nourishes the community while educating about the important relationships between sustainable agricultural practices, local ecology, and thoughtful food habits.

Rationale that supports the vision: When students learn healthy nutrition and local, organic gardening at school, they create a positive sense of place, champion sustainable community development, raise their academic achievement, model healthy lifestyles, and become positive agents of change as environmental stewards.

Stakeholders: Division Heads, at least three teachers, parents, alumni, school donors, MSSA student representative, students, Garden Club Coordinator (meetings), Garden Coordinator (physical space), Director and Before and After School Care, Grounds Supervisor, Director of Finance and Operations, Facilities Manager and Events Coordinator, Facilities Director, Head of Summer Programs, Food Services Director, Head of Woodshop, Information Technologies staff person, and PFA liaison.

Goals, Objectives, & Timeline: see "Year Round School Garden & Orchard Calendar"

Uses: The garden is primarily an educational space that produces organic fruits, vegetables, and flowers for community consumption and enjoyment. The goal of the garden is experiential education, although it also produces tasteful organic food that is enjoyed in the Barn (cafeteria).

- Completed Growing Gardens School Garden Coordinator Certification Program.
- Wrote up overview documents: mission, vision, roles and responsibilities, year-round calendar, K-12 curriculum.

Logistics: Year Three, 2010 - 2011

At the end of year three.



Logistics: Year Three, 2010 - 2011

At the end of year three.



Logistics: Year Three, 2010 - 2011



At the end of year three, the garden is dedicated to woodshop teacher Tom Tucker.

Logistics: Year Four, 2011 - 2012

- Student Activity Garden & Beekeeping Club begins meeting twice every seven school days
- Four teachers completed Tualatin Valley Beekeepers Association Bee School, then installed apiary with two hives and wind break
- Dug orchard garden corn patch & worked with Linda Colwell to develop curriculum
- Resuscitated Beginning and Lower School Garden
- Began apple orchard care and apple tree nursery

Logistics: Year Four, 2011 - 2012

Four teachers completed Tualatin Valley Beekeepers Association Bee School, then installed apiary and wind break



Logistics: Year Four, 2011 - 2012



Students
started
beekeeping
almost
immediately



Logistics: Year Four, 2011 - 2012



Dug orchard garden corn patch & worked with Linda Colwell to develop curriculum

Logistics: Year Four, 2011 - 2012



Hand-operated machines helped us shell and grind the Roy's Calais Flint corn for tortillas, tamales, and cornbread.

Logistics: Year Four, 2011 - 2012



We nixtamalized the corn at the end of our ancient Mesoamerican unit, then we had a feast.

Logistics: Year Four, 2011 - 2012



Resuscitated Beginning and Lower School Garden



Logistics: Year Four, 2011 - 2012

Began apple orchard care, apple tree nursery, and harvesting with Portland Fruit Tree Project



Logistics: Year Four, 2011 - 2012

Began apple
orchard care,
apple tree
nursery, and
harvesting with
Portland Fruit
Tree Project



Logistics: Year Four, 2011 - 2012



A great
harvest
for the
food
insecure
of
Portland



Logistics: Year Four, 2011 - 2012



Cooking
with
apples
inside the
building



Middle School Garden



- 800 sq. ft. MS garden is 25 feet outside my classroom door.
- Row covers on some beds in winter.
- Greenhouse for starts.
- 20 raised beds on timer drip line, two green roof structures, giant chess board, pizza cob oven, greenhouse, garden shed, rain garden bioswale, native plants for honeybees, birds, and drought/flood conditions.
- Sits on slanted, southwest-facing hill.

Middle School Gardens

Students use gardens during the following times:

- Sixth grade often.
- Every two of seven class days for Garden & Beekeeping Club elective course (10-12 students).



Beginning & Lower School Garden

- BS/LS garden is across campus a 3-minute walk.
- 800 square feet of beds.
- Eight planting beds 8' x 25'.
- Row covers in winter.
- Greenhouse in lower school for starts.
- On timer drip line.
- Has another garden shed there to lock tools inside.
- Sits flat with line of tall trees to east, facing west, and gathers midday and late afternoon sun.



Beginning & Lower School Garden



Students use gardens during the following times:

- Pre-K and kindergarten periodically.
- Elementary school science classes periodically.
- Fifth grade self-contained classroom often.

Apple Orchard Garden

- Apple orchard garden is across campus a 3-minute walk.
- 20' x 30' of continuous bed.
- On raised, timer sprinkler irrigation.
- Sits flat facing south and against building.
- This garden is very near orchard and apiary.



Apple Orchard Garden

Students use gardens during the following times:

- Sixth grade often during fall and spring as our wheat/Sumeria and corn/MesoAmerica units are situated here.

Apiary

- 3 langstroth hives with a windbreak.
- 5 jackets with veils & gloves.
- Next to the apple orchard.
- The Garden and Beekeeping Club is planting borage and red currant for extra forage.



Apiary

Students use apiary during the following times:

- Every two of seven class days for Garden & Beekeeping Club elective course (10-12 students).
- Classes of younger students (Pre-K to 2nd) often visit the apiary for a lesson while they stand in the bee tent.

Partners from Off Campus

- <http://extension.oregonstate.edu/mb/> (Beekeeping mentor Tom Chester of OSU Master Beekeeper Program)
- <http://orsba.org/download/Temp/TVBABeeSchoolRegistration2014.pdf> (Tualatin Valley Beekeepers Association Bee School)
- <http://www.livehoneybees.com/> (Brian Lacy from Livehoneybees.com helped us get started on campus)
- <http://portlandfruit.org/> (Portland Fruit Tree Project)
- <http://www.homeorchardsociety.org/events/fruit-propagation-fair-2/> (Home Orchard Society's Fruit Propagation Fair for scion and rootstock)
- <http://www.newearthfarm.net/> (Scott Olsen at New Earth Farm in Hillsboro for bokashi compost)
- <http://eatthinkgrow.org/about/> (Linda Colwell taught us how to grow, harvest, nixtamalize, & cook Roy's Calais Flint Corn)
- <http://www.firespeaking.com/> (Eva and Max Edleson of Firespeaking.com designed and helped build the cob oven)
- <http://owengabbertllc.com/catlin-gabel-garden/> (Owen Gabbert designed and helped build our green roof structures)
- <http://www.pyatok.com/people/detail/13> (Kai Yonezawa designed and helped build our green roof structures)
- <http://edibleschoolyard.org/> (Edible Schoolyard taught our sixth grade team how to integrate garden & cooking into our curriculum)
- <http://fifthgradewinterhaven.org/> (William Thompson, 5th Grade Teacher and Systems Thinker at Winterhaven School, PPS, taught us aquaponics)
- <http://growing-gardens.org/portland-gardening-resources/school-gardens/> (Growing Gardens School Garden Coordinator Certificate Training Program)
- <http://www.oregonfoodbank.org/Our-Work/Building-Food-Security/Education-Programs/Seed-to-Supper> (Oregon Food Bank Seed to Supper Program)
- St. Andrews Emergency Food Pantry & Neighborhood House Emergency Food Pantry

Excitement on Campus

- Students continue to help design, build, & install
- Beekeeping
- Apple Tree Nursery
- Students Working with adults in cafeteria and main office to use QR codes and other technology for action projects

Tucker Garden Introduction for Self-Guided Tour of Campus



Chicken Fajitas Cafeteria Dish, focusing on food miles and local sourcing

Struggles

- The National Association of Independent Schools has not responded institutionally to IPCC reports on anthropogenic global warming, although they do encourage teachers to focus on sustainability. Consequently, our board and administration have not encouraged curriculum design on climate change, environmental justice, divestment/reinvestment, Systems Thinking, Permaculture, Transition, Resiliency, the New Economy, or Earth Democracy.
- Fewer than half of teachers embrace garden, orchard, or beekeeping opportunities.
- Attendance at Garden Club Meetings has dwindled.
- A parent donation of hives had American Foulbrood, which we had to destroy and which may have infected our apiary.

Advice

- Involve students, teachers, staff, parents, and administration in each step of the operation, from planning & design to construction, digging, & installation, to harvest & celebration.
- Understand that you will often be working alone or with a handful of faithful compañeros. Be okay with that. You're doing it because you love it and because it's crucially important.
- Make the mission, vision, process, & curriculum available to all online so that if you stepped away from the job, someone else could pick it up and continue your efforts.

Resources

- “Why Garden in School?” essay (http://www.gardenabcs.com/uploads/Why_Garden_in_School_Unabridged_Essay.pdf)
- Beekeeping at Catlin Gabel School YouTube video (https://www.youtube.com/watch?v=cFd_chwg1Wo)
- Combatting Global Warming with Gardening at Catlin Gabel School YouTube video (<https://www.youtube.com/watch?v=O0FhRX7q8bM>)
- Transition Town PDX blog (<http://transitiontownpdx.blogspot.com/>)
- PSU Sustainability History Project Interview, 2013 (<https://soundcloud.com/portland-state-library/sustainability-history-135>)