**2012 Gardening Camp**

**Monday, July 9th**

\*Activity available for kids that finish projects early – coloring pages of insects, fruit, or trees copied from Enviroscapes: Color Your Imagination Wild! (2000, MindWare, ISBN 1-892069-21-0)

**8:00-8:30 Grow Your Name** – glue grass seed in shape of your name onto paper towel, place on plate, cover with soil, mist with water (**glue, grass seed, paper towels, waterproof plates, soil, water sprayer**)

**8:30-9:30 Make Adobe Bricks** – mix 70% sand, 30% clay, some water, and some straw (optional); roll flat and cut bricks then leave to dry on wax paper or straw, or form bricks using ice cube trays (lay out to dry after they firm up in the brick shape) (**sand, clay, straw, cups of water, knives or ice cube trays or even cookie cutters for interesting shapes, waterproof plates or wax paper**) – leave to dry outside all week!

**9:30-10:00 Track Casting** – flatten wet sand inside a bowl, press track into wet sand, pour plaster of Paris into track (**tracks, sand, water bottles, plaster of Paris, plastic cups for mixing plaster**) – leave to harden for a couple of days

**10:00-10:30 Wash Up and Snack** from Lana’s Fruit and Vegetable Snack Recipes Cookbook (16 simple recipes), available for 19.95 on <http://www.learningzonexpress.com/>; “kiwi rice cake teddy bear snacks” (**rice cakes, nut or fruit butter, kiwis, red and green grapes, knives, napkins**)

**10:30-11:00 Food Chain Game** – spread popped popcorn over a large area outside; distribute felt ‘name tags’ and safety pins to kids (brown felt = hawks, green felt = frogs, yellow felt = grasshoppers); give each player a sandwich baggie marked halfway up with a strip of masking tape; when the simulation starts, grasshoppers try to fill their bags to the halfway line with popcorn while watching out for frogs – if a frog tags them, the grasshopper must empty its ‘stomach contents’ (popcorn) into frog’s baggie and go sit down on the sidelines to represent being eaten; frogs try to get halfway-full baggies while watching out for the hawks who will eat them (and make them empty their stomachs). . . the day ends after a set amount of time (a couple of minutes or so) or when one species is gone. . . . hawks can only eat frogs which can only eat grasshoppers which can only eat popcorn. . .if an animal is not eaten during the simulation, yet does not have a full stomach, they still die due to starvation. . . . after simulation talk about why species usually do not eat just ONE thing in nature (and why those that do are at higher risk for extinction---pandas, koalas, etc.), and why there are more prey than predators (energy consumed is used by the prey to live and reproduce, so those further up the food chain only get a portion of the total energy consumed by their prey and therefore need to eat many grasshoppers, etc. to get the energy they need to live) (**felt squares, safety pins, baggies with tape to indicate ‘full stomachs’, popped popcorn);** students often want to try playing a different role in subsequent simulations, or vary the number of each type of animal to see what happens---it works best with about a 7:3:1 ratio of hoppers: frogs: hawks, but students can figure that out for themselves

**11:00-11:15 Play on the pirate ship** in the gardens and take pictures of the group on way back to education building

**11:15-12:00 Fundanas** – Bandanas with nature quests on them. . . we have Tree Quest, Bug Bingo, Biodiversity Bingo, Scat & Track Quest, Lily’s Pond Bingo, and Nature Quest. . . website: [www.fundanabandanas.com](http://www.fundanabandanas.com)

**12:00-12:30 Lunch** (sack lunches brought from home)

**12:30-1:00 Plant Parts We Eat/Vegetable Rumba** (Junior Master Gardener Basic Curriculum p. 9-10; also “Vegetable Rumba” in 4H curriculum Food, Culture, and Reading (BU-08379) p. 40-41); have students draw a generic plant with roots, stem, flower, leaves, seed, fruit; for each part of the plant, list some foods that we eat that come from that plant part; extension of activity—talk about how each part of the plant helps the plant grow or reproduce (**paper, pencils or pens)**

**1:00-1:30 Origins of Our Foods** – every student gets a world map with the countries outlined (off of a Google image search for ‘world map’---many to choose from); list of the continents/food origins available on p. 185-191 in Cultural Uses of Plants: A Guide to Learning about Ethnobotany by Gabriell DeBear Paye (18.50, ISBN 0-89327-422-4) and also p. 96 in Food, Culture, and Reading (4H Curriculum BU-08379); describe the uses of each plant for culinary, medicinal, cultural purposes and identify the continent of origin---students locate the continent and list the foods originating from it next to each continent (color each continent differently); optional, from p. 101 in Food, Culture, and Reading is a list of the five top fruit-producing countries for 8 specific fruits---identify and label those countries as well (**world maps, colored pencils, pens**)

**1:30-2:30 Chewed Paper and Sticky Stuff** – lesson from Oklahoma Ag in the Classroom at <http://www.clover.okstate.edu/fourh/aitc/lessons/intermed/pinata.pdf>; make maracas by putting a few beans in a water balloon and inflating the water balloon, then covering it with papier-mâché and letting it dry for a few days, then paint! (**water balloons, beans, newspapers, flour, water, bowls to mix 2 cups flour and 2 cups water,** **paint and paintbrushes**); optional – since adhesives stick to surfaces by getting into the tiny dents and pores that are too small to see with the naked eye, let students view newspaper through a microscope

**2:30-3:00 Snack: Tortillas in a Bag** – recipe from Oklahoma Ag in the Classroom at <http://www.clover.okstate.edu/fourh/aitc/lessons/intermed/tortilla.pdf>; (**for every 4 students: 1 qt storage bag, 1 ½ c. flour, 1 t baking powder, 3 T shortening, ½ c. hot tap water, ¼ t salt (or to taste), butter**)

**3:00-3:30 A Field of Beans** from Oklahoma Ag in the Classroom at <http://www.clover.okstate.edu/fourh/aitc/lessons/legumes.pdf>; give every pair of students a clear plastic cup and some mung bean and/or alfalfa seeds, and have the students draw what the seeds look like on the first square of a piece of paper that has been folded into six sections. Then have them put the seeds in the cup and cover them with water, and have them draw their cup with seeds in the second section of the paper. Each morning, have the students draw what they see and then replace the water with fresh water each day. After a few days, let the students eat the sprouts (bring crackers and ranch dressing) – (**mung bean and alfalfa seeds from whole foods store, clear plastic cups, paper, pencils, crackers, ranch dressing**)

**3:30-5:00 Bean Sorting Map and Bean Mosaics** from Oklahoma Ag in the Classroom at <http://www.clover.okstate.edu/fourh/aitc/lessons/legumes.pdf>; let students determine what sort of beans they have (bring a variety from the store), and then let them make mosaics on cardboard by gluing beans to the cardboard (**cardboard pieces, glue, a variety of dry beans**)

**Tuesday, July 10th – Insect Adventure** (see last year’s agenda for detailed descriptions)

**8:00-8:30 Antennae headbands/nametags; insect coloring pages** while waiting for stragglers

**8:30-9:00 Make insect kill jars** (baby food jars with a couple spoonfuls of plaster of Paris in the bottom, a splash of ethyl acetate, and a small wad of paper towel) while kids introduce themselves to Insect Adventure coordinator

**9:00-9:30 Introduction to entomology** – discussed the differences between insects, arachnids, centipedes/millipedes, and crustaceans (number of legs, body segments, habitats, diets, etc.) and dispelled any myths the kids brought up (daddy long legs are the most venomous, brown recluse spider bites make your legs rot off, etc.)

**9:30-11:30 Collect insects at botanic gardens** using Ziploc bags and insect sweep nets

**11:30-12:00 Lunch**

**12:00-12:30 Maggot art** (blow fly maggots placed in drops of tempera paint on construction paper)

**12:30-1:00 Termite NASCAR** (termites follow trails made by Papermate pens)

**1:00-2:00 Create a Bug** – students were given random objects (parts of egg cartons, red cellophane, buttons, pipe cleaners, artificial flower petals, netting, metallic confetti, beads, toothpicks, pom poms, etc.) and allowed to create a bug; after finishing, they shared their bug and its characteristics

**2:00-3:00 Pin insects** (kids that didn’t want to pin insects worked on a bug word find or helped the others look in field guides to identify what they had caught)

**3:00-3:30 Fried mealworms for snack**

**3:30-5:00 Insect Zoo** presentation, with kids allowed to pet or handle various arthropods

**Wednesday, July 11th**

**7:30-8:00 Check on beans and grass seed** (water if necessary); **make flower presses** out of cardboard and newspaper. Cardboard precut to about 8.5”x 11”, kids cut newspaper (**cardboard, newspaper, scissors, pencils, twine**)

**8:00-8:30 Junior Plant Scientist – Plant Morphology In-Garden Exploration** from <http://jrplantscientist.ath.cx/plant_morphology/in_garden/morphology_in_garden.pdf>.

**8:30-9:00 Arboretum Tour** and specimen collection for plant presses (clover, weeds, tree leaves, etc.)

**9:00-10:00 Landscape Symbols** – use circle templates and pencils to draw various kinds of trees as shown on landscape architecture drawings, using the 16 basic line types (blip, fray, arc, pepper, bookshelf, etc.) (**paper, pens, circle templates**)

**10:00-10:20 Wash Up and Snack** from Lana’s Fruit and Vegetable Snack Recipes Cookbook (16 simple recipes), available for 19.95 on <http://www.learningzonexpress.com/>; “veggie bagel face” (**bagels, cream cheese, cherry tomatoes, sugar snap peas, shredded carrot, baby carrots, knives, napkins**)

**10:20-12:00 Bamboo Windchimes** – Assemble windchimes from various lengths of pre-drilled bamboo, decorating with beads, paint, seeds, etc. (**bamboo pieces with pre-drilled holes, fishing line, pony beads, paint, glue, seeds**)

**12:00-12:30 Lunch**

**12:30-1:00 Nutrition talk** – Display food portion sizes (fake foods from “MyPlate” food kit) from Nasco ([www.enasco.com](http://www.enasco.com)) and show portion size examples (from Nasco Portion Sizes Kit), show MyPlate from Nasco with sections showing proper proportions of protein, grains, fruits, vegetables, dairy) and talk about examples of protein, grains, etc.

**1:00-1:30 A Purple Cow** from Oklahoma Ag in the Classroom <http://oklahoma4h.okstate.edu/aitc/lessons/primary/purplecow.pdf>; discuss the health benefits of fruits and vegetables with different colors; have students draw pictures of fruits and vegetables that are red, orange, yellow, green, and blue/purple.

**1:30-2:00 Unearth the Animal Tracks** – remove the plaster of Paris tracks from the sand; use brushes (toothbrushes, paintbrushes, etc.) to remove the sand from the detail of the tracks **(brushes)**

**2:00-2:15 Blow bubbles** – at first with just dishwashing soap and water, then explain where we get glycerin (from soybeans) and add a tablespoon to each dish---the glycerin keeps the water from evaporating too quickly, so bubbles last longer **(bubble wands, plates of dishwashing soap/water mix, glycerin)**

**2:15-2:30 Read the book Weslandia aloud to the group** (by Paul Fleischman, $6.99, ISBN 076361052-6)

**2:30-3:00 Go over parts of speech (verbs, nouns, adjectives) and distribute “Ag Libs” to practice** from Oklahoma Ag in the Classroom Ag Libs <http://oklahoma4h.okstate.edu/aitc/lessons/primary/aglibs.pdf>

**3:00-3:20 Snack** from Lana’s Fruit and Vegetable Snack Recipes Cookbook (16 simple recipes), available for 19.95 on <http://www.learningzonexpress.com/>; “stoplight bites” (**graham crackers, cream cheese, strawberries, pineapple, kiwi, knives, napkins**)

**3:20-4:00 have small groups of students invent symbols for the garden** – top 20 verbs needed in the garden, top 20 nouns, top 20 adjectives, numbers 0-20, and make a large poster of all of the words in the new language “Garden-ese” (JMG Literature in the Garden activity p. 137-139) (**paper, pencils**)

**4:00-5:00 Garden-ese Dictionaries** – give each student a brown paper sack that they can cut open and use as ‘bark’ to write their new Garden-ese glossaries on (**brown lunch sacks, markers**)

**Thursday, July 12th**

**7:30-8:00 Sundials –** Cut gnomens out of posterboard at 36 degree angle for Stillwater, Oklahoma (gnomen should be the same degree as your latitude) then fasten to middle of a square or rectangular piece of cardboard or posterboard to make blank sundials—put outside in a sunny location and mark the position of the shadow each hour (don’t move the sundial during this process) (**cardboard, posterboard, protractor, rulers, pencils, markers, scissors, tape**)

**8:00-9:00 Principles of Landscape Design pamphlet** – walk around garden and look for examples of balance, texture, scale, transition, unity, etc. Look at elements of design (mass, form, lines, emphasis, color) (**pamphlet, pencils**)

**9:00-10:00 Landscape Symbols and “Coloring”** – use circle templates and colored pencils to draw shrubs of various shapes and sizes, then use shading techniques to color them in (**paper, circle templates, colored pencils, pencils**)

**10:00-10:20 Wash Up and Snack** from Lana’s Fruit and Vegetable Snack Recipes Cookbook (16 simple recipes), available for 19.95 on <http://www.learningzonexpress.com/>; “strawberry mini-mouse nibbles” (**graham crackers, strawberry cream cheese, strawberries, string cheese, sliced almonds, knives, napkins**)

**10:20-11:30 Tie Dye!** – each student gets a piece of 100% cotton (white) and rubber bands and marbles (rubber bands around marbles under cloth create circles; rubber bands create lines, rubber bands around fabric further down from marble create sunburst pattern); when tied the way the student desires, soak cloth in dye for about 30 minutes, then rinse in cold running water until cloth rinses clear before undoing rubber bands and marbles) (**Rit dyes, plastic tubs, rubber bands, marbles, rubber gloves, cloth—I put 3 packets of powdered Rit in a half “muck bucket” (big round plastic tub with rope handles on top, found at Walmart) of cold water and it worked well**)

**11:30-12:00 Dirty pictures** – gather soil from several different locations, or get sand, potting mix, and soil; use glue to draw on paper and sprinkle ‘dirt’ for coloring the lines (**soil samples, sand, potting mix, glue, paper**)

**12:00-12:30 Lunch**

**12:30-1:30 Botanical Wood Prints** – using potatoes and cheap metal knives and spoons, carve half of a potato into a positive or negative impression (simple is best—stars, hearts, etc.) and then let students use the potato ‘stamps’ to make block prints using tempera paint and paper (**tempera paint, potatoes, cheap knives and spoons, paper**)

**1:30-2:00 Measure a Tree** using a stick and tape measure, or try using a ratio of an item of known height/its shadow length equals (height of tree)/tree shadow length (**100’ measuring tape**)

**2:00-3:00 Solar Oven Smores (pizza boxes, aluminum foil, tape, scissors, saran wrap, stick to prop lid open, graham crackers, chocolate, marshmallows) –** make solar ovens following directions at http://smile.cosi.org/solar-powered-cooking.pdf

**3:00-4:00 Know and show sombrero –** From Junior Master Gardener curriculum—kids use packing tape (2” wide) and newspapers, plus any art materials they need to create a sombrero decorated to show what they’ve learned this week, and then share with others using “show and tell” (**newspapers, packing tape, miscellaneous art supplies**)

**4:00-5:00 Food J-I-N-G-O game, check on sprouts**

**Friday, July 13th**

**8:00-8:45 Gardening Obstacle Course –** jump rope with a piece of an old watering hose, carry radishes in a plastic spoon while running around cones, use a trowel to roll a potato 20 yards, etc. (**miscellaneous garden equipment and vegetables**)

**8:45-9:30 4H Healthy Choices survey (to fulfill requirements of grant for nutrition materials)**

**9:30-10:00 Introduction to Geocaching** – visit several geocaches hidden in the gardens, describe the game to students

**10:00-10:20 Wash Up and Snack** – Eat our bean sprouts after drawing what they look like (**crackers, ranch dressing**)

**10:20-11:00** **Paint maracas** – (**paint, brushes**)

**11:00-12:00 Nutty Investigations** – drop soup cans with pennies inside through a 2’ long (4” diameter) PVC pipe to try and break nuts and/or seeds (in their shells) open; keep track of how many pennies it takes to break open walnuts, peanuts, pistachios (should be zero), acorns, cacao, pecans, etc. (peach pits take a lot of pennies!!!); make sure the students repeat several times with each type of nut or seed, and compare across groups; reiterate the importance of keeping the trials ‘fair’ by using the same length of PVC pipe, counting all of the pennies, not slamming the soup cans down the tube, etc.; have the students make a chart of the results (with averages over multiple trials, depending upon the age of the kids) (**PVC pipe 2’ long, 4” diameter – one per group, variety of nuts still in shells, empty soup cans, pennies**)

**12:00-12:30 Lunch**

**12:30-1:30 Scavenger hunt and fairy ‘catching’ in the gardens –** find the items on the list, as well as the fairies we’ve hidden among the plants (you don’t have to walk in any flower beds to find them!)

**1:30-3:00 Alien Classification** – students cut out ‘critter cards’ (total = 24) on <http://www.microbeworld.org/index.php?option=com_content&view=article&id=344&Itemid=212> and make their own dichotomous key to learn how scientists classify living organisms; I like this particular classification ‘critter’ because there are no preconceived notions about how they ‘should’ be classified; I like to have students do this activity in pairs (more than two get into too many disagreements about how it should be done) (**large sheets of paper, glue sticks, critter cards, scissors, crayons or markers to color critters**) (Another version of classification is in the Junior Master Gardener Basic Curriculum and is called “Linnaeus’ World Wide Names” p. 142-143)

**3:00-3:45 Make homemade ice cream** – Make ice cream in a bag using Oklahoma Ag in the Classroom recipe at <http://www.clover.okstate.edu/fourh/aitc/lessons/extras/recipes/icecream.html> or put ingredients in an ice cream freezer to save money and mess (**per group of four: ¼ c. sugar, ½ t vanilla, 1 c. 2% milk, 1 c. whipping cream, ice, ¾ c. water, ¾ c. rock salt, measuring cups and spoons, plastic cups, wooden spoon, plastic spoons**)

**3:45-5:00 Check on adobe ‘bricks’, pick up supplies, finish any artwork, gather drying art (cloth, etc.)**