**draft through 11.25**

**Junior Master Gardener Level Two 2013 Fall Syllabus**

*S t. M a r y ’ s C a t h o l I c S c h o o l*

*Elective offered to 6-8th graders over 18 weeks, 3 days/week, 45 min. sessions*

color key **Teacher/Leader Guide Operation Thistle Operation W.A.T.E.R.**

***Cumulative list of certification activities completed completed through Oct17:*

Teacher/Leader Guide***Hamburger Plants (p.3)
Home Sweet Home (p.157)
Know & Show Sombrero (p.4)
Make Your Pick (p.159)
Small & Large (p.160)
Paper Towel Gardening (p.165)
Building Bins & Compost Sandwiches (p.31, substituting compost demo)
Rules are Rules (p.161)
Schedule It (p.162)
Paper Towel Gardening (p.165)  or Tender Transplants (p.167)
Plant Parts Rap (p.8)
Building Bins & Compost Sandwiches (p.31)
Oxygen Factory (p.17)
Garden to the Table (p.171)
Plant a Seed (p.199, from Life Skills & Career Exploration Chapter)*

**Operation Thistle
*Importance/Uses of Plants*** *To Do List (p.2)**Plant Plastic (p.13)* ***Plant Classification*** *Indoor Botan. Garden(p.20) Leaf Book (p.43)*

***Plant Parts*** *Collage Casserole (p.32) Quick Draw Flowers (p.43)*

***Plant Needs*** *Variable Investigation(p.46) Home Made Sprout Garden (p.53)*

***Plant Growth*** *Cultivating Contraption(p.56)Temperature Tantrum (p.71)*

***Plant Processes*** *Tree Murder Mystery(p.76) Root Shapes (p.85)*

***Seed Propagation*** *Scraping Spores (p.93) Frankenstein Hybrid (p.99)* ***Vegetative Propagation*** *6Wk Prop Production(p.106)**Veggie Soak (p.115)*

***Life Skills & Career Explor*** *Fruit Toss (p.124)*

 **Operation W.A.T.E.R.
*Soil Color/Texture/Structure*** *Loamy Homey(p.6) The Feel of Soil (p.15)* ***Soil Nutrients*** *Plant Makeovers(p.28) Nutrient Nest(p.33)* ***Soil Improvement*** *2-L Compost Capsule(p.49) Buried Treasure(p.57)****Soil Conservation*** *2,000,000,000 Tons(p.60) Sponge Run(p.77)*

***The Water Cycle and You*** *Water Cycle Museum* *(p.80) Fried Ice (p.93)*

***Aquifer/Watershed/Wetland*** *Water in Your Hands(p.100) Percolation Soda (p.109)*

***Water Movement*** *Percolation Race (p.109) Disappearing Water (p.125)*

***Water Conservation*** *Root Zone Water (p.135) Clear Gold (p.135)*

***Life Skills & Career Explor*** *Not Going With the Flow*

Week 1 - Aug. 19, 21, 22

***This week’s topics/tasks:* Importance & uses of plants,** plant needs1, **Soil texture/color/structure**

Aug. 19
***5mins -*** Know & Show Sombrero head wrapping as they enter

***20mins***

*Pre-test (questions 1-4)*

***25mins***

Know & Show Sombrero, P.L.A.N.T.S Needs (pg 4 & 11, Teacher/Leader Guide)

*What do plants need, how do plants provide for our needs?*

Aug. 21

***10mins***

Hamburger Plant (pg 3, teacher/leader guide)

*Almost anything you eat is a plant origin? Why?*

***30mins***

To Do List (pg 2, Operation Thistle)

*Partners complete and share/improve lists.*

***10mins***

*In class homework demo:* Plant Plastic (pg 13, Operation Thistle)

*Where does ordinary plastic come from? What would be some advantages of creating plant-based plastic?*

Aug. 22
***30mins***

Loamy homey (pgs. 6-7, Operation WATER)

*Demo with balls, discussion, intro/discuss next sessions demo experiment. Use kids to complete demo. Draw conclusion on what is good soil, how good soil looks/feels.*

***10mins***

In class homework demo: The Feel of Soil (pg 15, Operation WATER)

*Review plant needs and how they can identify soil that would provide for plant needs.*

***10mins***

Home Sweet Home (pg 157, 296appendix, Teacher/Leader Guide)

*Preselect 3 possible locations – 2 that are somehow less desirable.*

Week 2 - Aug. 26**,** 28, 29

***This week’s topics/tasks:*** selecting garden site, fall garden plant selection, space requirements, taking soil samples, garden planning – soliciting donations

Aug. 26

***5mins***

*Pre-test (questions 5-9)*

***5mins***

5 Questions from last week …

 *What are the 5 basic plant needs?*

 *Which part of a hamburger does not have a plant origin?*

 *Can you name 3 soil particles?*

 *What does good soil look and feel like?*

 *At the very least, how many hours of sunlight does a veggie garden need?*

***25mins***

Home Sweet Home (pg 157, 296appendix, Teacher/Leader Guide)

*Preselect 3 possible locations – 2 that are somehow less desirable.*

**

***10mins***

Small and Large (pg 160, Teacher/Leader Guide)

*This is one of several activities they might see again as an upcoming service project!*

***5mins***

Introduce Make Your Pick (pg 159, 298appendix, Teacher/Leader Guide + planting chart)

*Share planting chart info. We’ll be selecting our plants next session. Be thinking about what you would like to see growing in our garden.*

Aug. 28
***20mins***

Make Your Pick (pg 159, 298appendix, Teacher/Leader Guide + planting chart)

*You can preselect or allow kids choices based on your rec and how much space you have.*

***20mins***

*JMGers garden work prep/planning:*

 *As a group, create a master list of needed materials.*

 *Make guesstimates on costs for items*

 *Brainstorm potential donors & ways to solicit donations*

 *As a group, draft text of letters to be written*

Aug. 29

***20mins***

>>Soil science speaker<<

***20mins***

*JMGers garden work prep/planning:*

 *Finalize text of donor letters*

 *Each student writes one letter, plan follow up….*

Week 3  Sept. 4, 5

***This week’s topics/tasks:* soil nutrients**, plan garden work day

**soil improvement**

Sept. 4

***5mins***

5 Questions … (Ask students your own 5 review questions from concepts learned last week.)

***35mins***

Plant Makeover (pg 28, Operation Thistle)

*Divide into three groups - focus only on NPK. Complete, share, take photos.*

***5mins***

*Assign homework:* Nutrient Nest (pg 33, Operation WATER)

***10mins***

*Allow JMGers help participate in garden work day prep/planning.*

 *Share some of the logistics – let them see how you are planning.*

 *What’s the date? What tasks/whose responsible?*

Sept. 5
***35mins***

2-liter Compost Capsule (pgs. 49, Operation WATER)

*Partner kids to create the experimental composting capsules.*

***5mins***

*Assign homework:* Buried Treasure (pg 57, Operation WATER)

***10mins***

*Allow JMGers help participate in garden work day prep/planning.*

 *Share some of the logistics – let them see how you are planning.*

 *What tasks/whose responsible?*

Week 4 Sept. 9, 11, 12

***This week’s topics/tasks:*** Composting, compost bin install, garden construction, garden care/journaling

Sept. 9
As they come in they should update 2-liter Compost Capsule data page

 ***5mins***

*Pre-test (questions 10-14)*

***5mins***

5 Questions … (Ask students your own 5 review questions from concepts learned last week.)

***40mins***

>>Composting bin demo & install<<

Sept. 11
***35mins***
Paper Towel Gardening (p.165,Teacher/Leader Guide)
*Allow kids to each create at least one square and work as group to map out garden.*

***15mins***

*Allow JMGers help participate in garden work day prep/planning.*

 *Share some of the logistics – let them see how you are planning.*

 *What tasks/whose responsible?*

Sept. 12
>>Garden install and initial planting<<

Week 5 Sept. 16, 18, 19

***This week’s topics/tasks:*** Establish rules, planning garden care/maintenance **soil conservation**, planting**, plant needs**, **plant classification,** garden care/journaling

Sept. 16
As they come in they should update 2-liter Compost Capsule data page

***5mins***

5 Questions … (Ask students your own 5 review questions from concepts learned last week.)

***15mins***

Rules are Rules & Schedule It (pg 161 and 162, Teacher/Leader Guide)

*For Schedule It, you’ll divide kids into groups to set logistics for caring for garden. You should set those maintenance dates for when your JMG meets. Starting on the next session, we’ll reserve the last 10-15 minutes to go out to the garden for caring for garden and journaling.*

***30 mins***

2,000,000,000 Tons (pgs. 60, Operation WATER)

*Partner kids to create the experimental composting capsules.*

Sept. 18

***10 mins*** *In class homework demo:* Sponge Run (pgs. 77, Operation WATER)

*We’ll close talking about soils for a while with this quick demo activity lesson. Start by reviewing concepts learned in* 2,000,000,000 Tons lesson.

***30 mins***

Indoor Botanical Garden of Art? (pg 50, Operation Thistle)

*You’ll likely only have time to introduce this lesson and have them begin working. And, you’ll need some bulletin board paper/scissors/glue/crafty materials for this one – you have access to these kinds of supplies at the school??*

***10mins***

Garden care/journaling

Sept. 19
As they come in they should update 2-liter Compost Capsule data page

***30 mins***

Complete Indoor Botanical Garden of Art? (pg 50, Operation Thistle)

***5mins***

*Assign homework:* Leaf Book(pg 77, Operation WATER)

***15mins***

Garden care/journaling

Week 6 Sept. 23, 25, 26

***This week’s topics/tasks:* Plant parts,** planning service project, garden care/journaling

Sept. 23
As they come in they should update 2-liter Compost Capsule data page

***5mins***

5 Questions … (Ask students your own 5 review questions from concepts learned last week. \*It might be a good idea to reiterate concepts/questions from pretest. \*)

***Use remaining time to catch up on anything that needs to be caught up on then reserve last 1-15mins to go downstairs and begin journaling.***

*>> Today send home note requesting kids save and bring in an empty butter container with lid.*

Sept. 25
***5mins***
*Pre-test (questions 15-19)*

***20 mins***

Collage Casserole (pg 32, Operation Thistle)

Complete as a large group.

***10mins***

Plants parts Rap (pg 8, Teacher/leader guide)

Introduce idea that they’ll be taking part in a service project by teaching a younger group of kids at the school. This rap song will be part of what they’ll do for the younger class. Divide kids into 3 teams, assign stanzas to each group, last stanza will be performed together.

***15mins***

Garden care/journaling

Sept. 26
As they come in they should update 2-liter Compost Capsule data page

***15mins***

*In class homework:* Quick Draw Flowers (pg 42, Operation Thistle)

*This could be introduced before rap practice then used as a “buffer activity” as groups finish practicing.*

***15mins***

Plants parts Rap (pg 3, teacher/leader guide)

Continued rap practice. Challenge them to memorize words and think about rapper costumes to wear when they actually perform.

***15mins***

Garden care/journaling

Week 7 Oct. 7, 9, 10

**Plant needs, plant growth, vegetative propagation**, service project, garden care/journaling

Oct. 7

***5mins***

5 Questions … (Ask students your own 5 review questions from concepts learned last week.)

***25mins***

Variable Investigation (pg 46, Operation Thistle)

Complete as class demo. Adapt activity to test effects of growth on small plants that can grow in the classroom such as pothos ivy. Specifically test use of water soluble fertilizer:

1. *No fertilizer B. label-instructed amount C. 3X label-instructed amount*

***15mins***

Garden care/journaling

Oct. 9

***10mins***

*Assign homework:* Bean Sprout Garden (pg 53, Operation Thistle)

*Discuss project and pass out 1-2 tablespoons of lentil seeds per student. Place in the butter containers they brought in.*

***20mins***

*Service project planning/preparation*

Reiterate that one of their primary jobs as JMGers is to do things for others. One of the service projects they’ll be doing this semester is spend some time teach another class. Explain that their job will be to teach about plant parts by performing the *Plant Parts Rap.* And, that they’ll be teaching about plant spacing needs by leading the *Small and Large* activity that they did earlier in the semester. Spend rest of allotted time letting kids practice *Plant Parts Rap.* Tell them that tomorrow they’ll be talking about how they can work together to teach the *Small and Large* lesson.

***15mins***

Garden care/journaling

Oct. 10

As they come in they should tend to their Variable Investigation

***15mins***

*Service project planning/preparation*

*Review: Small and Large* activity that they did earlier in the semester. Ask students to share thoughts of how they might assign roles to share the job of teaching this to the younger group.(Mary Ann, if the class elects to have a couple of your students to lead this lesson when they teach it, that would be great. There are a few of tasks (ie assembling of the four chairs, switching on lights to simulate sunlight, pretend showering with water can) that could be assigned to other JMGers as well.

***30mins***

>>Propagation demo<<

***Skip journal/garden care this session.***

Week 8 Oct. 14, 16, 17

**Vegetative propagation**, propagation business/teams, garden care/journaling

Oct. 14

***5mins***

5 Questions … (Ask students your own 5 review questions from concepts learned last week.)

***25mins***

6 Week Propagation Production Venture (pg 106, Operation Thistle)
Review some of the concepts learned and propagation techniques demonstrated from last week. Place a couple of parent plants in front of the group, demonstrate how to take cuttings from those plants specifically, then have a couple volunteers do the same.

Ask the group to imagine how many new plants could potentially be grown from those to parent plants. Help group come to consensus on an estimate of the number of new plants that could be created then as the group to think about what they could possibly do with all those plants. Introduce idea of class production business and begin working through those first four discussion questions on pg 108.

***15mins***

Garden care/journaling

Oct. 16

***25mins***

6 Week Propagation Production Venture (pg 106, Operation Thistle)

Continue working through lesson. Via a group discussion, answer remaining questions on pg. 108 and plan specific first steps that will happen over the next couple meetings.

 ***5mins****Assign homework:* Veggie Soak (pg 115, Operation Thistle)

***15mins***

Garden care/journaling

Oct. 17

***30mins***

Cultivating Contraption (pg 56, Operation Thistle)

The work on the class business will continue with work to plan/create a low-budget “indoor greenhouse” that creates a better environment of warmer temps, bright light, and high humidity for the new cuttings. For the sake of time, do this as a big group design discussion – guide kids to determine where the plants will be in the room and the dimensions of the cultivating contraption. THEN, have them help sketch what they think they could build and create an inventory of the needed supplies that you will have available next week! It would be GREAT to have a set of sample connectors, pipe and plastic sheeting for them to see as they plan!

***15mins***

Garden care/journaling

Week 9 Oct. 23, 24

Propagation business/teams, service project, garden care/journaling

Week 10 Oct. 28, 30, 31

**Seed propagation, plant growth, plant processes**, propagation business work, service project prep, garden care/journaling

Oct. 28

***5mins***

*Pre-test (questions 18-22)*

***10mins****In class homework demo:* Roots Shapes (pg 85, Operation Thistle)

*\*\*For this activity and Temperature Tantrum tomorrow, soak a pinto beans in a bag w/ wet paper towel a couple days prior to get a head start on seed absorbing water.*

***15mins****In class homework:* Frankenstein Hybrid(pg 99, Operation Thistle)

*Put kids in partners to imagine and illustrate these Frankenstein veggies!*

***15mins***

Garden care/journaling

Oct. 30

***10mins***

*Begin this homework in class:*

Temperature Tantrum (pg 71, Operation Thistle)

***25mins***>>fern propagation demo speaker<<
Scraping Spores(pg 93, Operation Thistle)Your fern speaker ‘s demo would sub for this lesson. Have the speaker scale down the presentation for your JMGers – primary points to include: speak about how ferns are different from plants, the fern life cycle, and how to scrape spores/propagate. ***10mins***

Tend to their business venture & caring for plants

Oct. 31As they come in and for first five minutes, they should tend to their business venture & caring for plants

***15mins***

Tree Murder Mystery! (pg 76, Operation Thistle)

***15mins***

*Service project planning/preparation*

 ***15mins***

garden care/journaling

Week 11 Nov. 4, 6, 7

**Plant processes, harvesting,** service project prep, garden care/journaling

Nov. 4

***5mins***

5 Questions … (Ask students your own 5 review questions from concepts learned last week.)

***15mins***

Oxygen Factory (pg 17, Teacher/Leader Guide)

*This is a simple plant science activity that steps them through what happens during photosynthesis.*

***25mins***

Garden care/journaling or service project prep.

Nov. 6

***15mins***

Garden to the Table (pg 171, Teacher/Leader Guide)

*This is activity where you’ll start pointing that there are signs of the perfect time to pull or cut produce from the garden. Some of these harvest indicators are listed on that page. Take the group out to the garden and point out those indictors you’re already seeing in the garden. Also, show them what to be looking for in those plants that are now quite ready to eat ☺*

***20mins***

Garden care/journaling or service project prep.

Nov. 7

**>> Service project/performance day for first grade classes <<<**

Week 12 Nov. 11, 13, 14

**Life Skills - communication,** service project prep, garden care/journaling

Nov. 11

***5mins***

5 Questions … (Ask students your own 5 review questions from concepts learned last week.)

***25mins***

Plant a Seed\* (pg 199, Teacher/Leader Guide)

*Have fun with this one. It’s a direction-following exercise that can be fun and silly if you have the right kid following directions of how to plant a seed exactly as they are given by the fellow student….*

***15mins***

Garden care/journaling or business venture work

\***With the completion of the *Plant a Seed* lesson if your group is current with the scheduled lessons, the have completed all requirements for the JMG Certification: Growing a Vegetable

Garden!**

Nov. 13

***20mins***

Water Cycle Museum (pgs. 80, Operation WATER)

*Begin working on this as a large group activity and have all supplies on hand to have them help guide you to create this working model of the water cycle that will actually separate the dirt from muddy water! As you work, they should completing the sketch and first 3 blanks on the observation page (p.83). If you finish the model, you can work together to complete as many blanks on the water cycle worksheet (p.84) as they already know.*

***5mins***

*In class homework:* Fried Ice (pg 42, Operation WATER)

*You’ll need a hot plate for this one. Start getting the pan really hot while they are working on their museums.*

***20mins***

Garden care/journalingor business venture work

Nov. 14

***25mins***

Water Cycle Museum (pgs. 80, Operation WATER)

*Complete work on creating this model and worksheet. Repeatedly challenge them to explain the difference between evaporation and transpiration.*

***20mins***

Garden care/journalingor business venture work

Week 13 Nov. 18, 20, 21

**Aquifers/watersheds/wetlands**, **Water movement**, propagation business4, garden care/journaling

Nov. 18

HERB DAY

Nov. 20

***5mins***

*Pre-test (questions 18-22)*

***30mins***

Water in Your Hands (pg 100, Operation WATER)

***10mins***

Propagation business and garden care/journaling

Nov. 21

***15mins***

*In class homework:* Percolation Soda (pg 42, Operation WATER)

*This might be good one to do and allow kids to each enjoy an icy cup of juice that comes with it!*

***15mins***

*Spend this time having kids working to created advertisements (posters, flyers, school announcements on PA system) for upcoming plant sell.*

***15mins***

Garden care/journaling or business venture work

Week 14 Nov. 25

**Team building/communication**

Nov. 25

**>>>Video Plant Parts Rap<<<**

Fruit Toss(pg 93, Operation Thistle)This is a great team building activity – its designed for a larger group but should work fine for your kids. This is one of my favorites to do – let me know if you want to follow up by phone to discuss this one!

Rain Water Harvesting, propagation business6, garden care/journaling

Week 16\* Dec. 2, 4, 5
\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, garden care/journaling

Week 17 Dec. 9, 11, 12\*
\_\_\_\_\_\_\_\_\_\_\_\_\_, business sales day, garden care/journaling

Week 18 Dec. 17, 18, 19
\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, garden care/journaling

Dec. 20 Plant distribution

