Action Project Planning Worksheet

Overview

***What is an “Action Project”?***

*Your Action Project is a final project of your choice, which will serve as a tool for future educational outreach in your role as a MGV peer educator. You may work on your project individually, with a partner, or in a group. You will present your project (a 10-15 minute overview or abbreviated presentation) to the whole class on either March 23 or April 6, 2019.*

***What is an acceptable Action Project?***

*Your project should be a manageable, effective, and rewarding experience that relates to learning activities and materials covered in class, and is a project that will help fulfill local CCE Suffolk program goals and outcomes (plan of work).*

***What are examples of Action Projects?***

*You may create a presentation on a specific gardening topic or hands-on activity (for Spring Gardening School and/or Speakers’ Bureau offering), a detailed Educational Outreach Project you plan to implement in a school, community, or other garden location, a series of timely articles on a topic for the LI Gardening blog, other educational product.*

***Preparing for the Action Project***

* *Complete the module in Moodle called “ACTION PROJECT” and work through the “Master Gardener Volunteers as Peer Educators: Teaching, Not Telling” assignments in this module (this will open the first week of November and has December due dates).*

*Use this worksheet to help you through each of the following 8 steps. See the dates below that each step is due.*

*Assignments for each step will vary, and may be a Journal Entry to submit in Moodle, a Moodle Discussion Forum, an update emailed to Donna, or a page in this worksheet to hand in.*

**TO DO LIST:**

**X Project Proposal:** Due December 8 (handed out on November 3rd)- if you plan to work with a partner or group, you will know this at this point. - Completed

**X Steps 1 & 2**: Due on or before December 15, 2018: assignments on pg 2 of this worksheet (handed out on November 3rd) - Completed

***Subsequent pages of this worksheet and 2019 assignment details will be handed out at the December 8th class:***

**X Steps 3 & 4**: Due January 12, 2019 - Completed.

**X Step 5**: Due February 9, 2019 - Completed

**X Step 6**: Due March 16 – Completed  
Submitted on Feb 4, 2019 when project was submitted in Moodle

**X Step 7**: Due Presentations of projects on either March 23 or April 6, 2019 - Completed   
Submitted on Feb 4, 2019 when project was submitted in Moodle

**X Step 8**: Due April 13, 2019 – Completed   
Submitted on March 23, 2019 with final project assessment, recommendations and support documentation.

**Steps One & Two**

**1. Assess Needs - COMPLETED**

**Moodle Assignment due by December 15th:**

*Using your answers to the questions below, and clearly articulate your thoughts in a Journal Entry (see directions in the* ***ACTION PROJECT MODULE in Moodle: STEP ONE)****. If you know that you are working with a partner or a group, work on this step together and indicate that in your Journal entry.*

Who is the audience, what are their characteristics and what are their needs?

1. The audiences for this project presentation are:

* Cornell Master Gardener Volunteers
* Community organizations who are interested in gardening and traditional gardening alternatives
* K-12 schools and students
* Higher Education
* Garden clubs

2. What tools will you use to assess the audience’s needs?

I will use a pre and post assessment to access the needs, knowledge and awareness of Kratky Hydroponics and Nutrition before and after the PowerPoint Presentation.

3. What makes this audience unique?   
They are all interested in gardening and have a desire to improve their knowledge and skills.

4. What is your timeline?

The timeline for this project is December 15, 2018 – March 15, 2019.   
  
During this period, the following activities will be conducted:

* Research Kratky hydroponics and nutrition
* Obtain all of the required materials
* Germinate seeds and cuttings
* Construct the Kratky Hydroponic gardens
* Monitor progress regularly by documenting and photographing the progress of both plant groups (Group I – Natural Sun Light), (Group II – LED Plant Grow Lights
* Document the progress, strengths and weaknesses of each group
* Formulate conclusions
* Develop the PowerPoint presentation
* Prepare the related hand-outs and materials in preparation for the scheduled presentation.

5. What is the focus of your action project?   
  
The focus of this action project is to provide an understanding of Kratky Hydroponics, the importance of plant nutrition and light. A Kratky Hydroponic herb and lettuce garden consisting of two groups (Group I – Natural Sun Light – South West Exposure), (Group II – LED Plant Grow Lights), will be created, managed and monitored during a three month period to ascertain the effectiveness of hydroponic gardening in an indoor, winter environment using natural sunlight and LED plant grow lights. Regular progress monitoring will be conducted. Photographs and journaling will be used to support findings and conclusions.

Two types of grow containers will be used in both groups to ascertain if there is any impact on plant growth using large plastic food safe containers vs. smaller Bell glass jars.

*Consider developing a well-thought-out, basic project rather that than a lofty one that overwhelms you.*

**2. Design Objectives - COMPLETED**

**“Action Project” Moodle Assignment due by December 15th:**

*Post and reply to your classmates in the online Discussion Forum to brainstorm and discuss the questions below, and if you have not done so already, consider project partnerships.*

*More on this topic will be covered in the* ***Action Project Module*** *in Moodle. Examples: Review statewide/local plan of work, connect with peers doing similar work, list potential objectives*

* What are the learning objectives (what will the audience be expected to learn)?   
    
  The learning objective of this project is to provide individuals with an understanding of the principals and requirements for starting and maintaining a Kratky Hydroponic lettuce and herb garden and to ascertain the impact of light (natural vs. Led) and container type and size on plant growth.
* Are they consistent with community needs? Are they consistent with your local plan of work? How?   
    
  I believe this project is consistent with community needs because it provides alternative strategies for gardeners to use to continue gardening during the winter months using an inexpensive hydroponics gardening solution. It also provides gardeners with an alternative strategy for harvesting fresh, organic lettuces, herbs and other vegetables in a cost effective manner during the winter months.

***Please note:*** *the following pages 3-4 are an overview of what to expect, and will be updated with fully developed worksheets with assignment details, handed out at the December 8 class meeting.*

**3. Develop Delivery Strategies - COMPLETED**

**Due by: January 12, 2019**

In what ways will you deliver the information? What ways are most effective for your audience? What challenges do you face?  
  
A PowerPoint presentation will be used to deliver the Information.  
  
Although, I recognize that the best way to deliver this information would be through a student-centered, hands-on, project-based learning activity, the 15 minute presentation time allocation does not provide sufficient time to do so.  
  
Project-Based Learning Alternative:  
In order to do this successfully as a project-based activity, I would need a minimum of 1 hour and 30 minutes instead of the 15 minutes provided.   
  
Instead of presenting a teacher-centered PowerPoint presentation to impart information, I would create a student-centered, project-based learning opportunity, in which students would be divided into 9 groups of 4 individuals each.   
  
Using provided resources and materials, students would research and learn about Kratky Hydroponics and nutrition, develop a Kratky prototype, and present their findings and prototype back to the rest of the class ( 3 minutes each group x 9 groups equals 27 - 30 minutes).

Students would be asked to work as a group to research and answer the following questions:

* What is Kratky Hydroponics?
* What are the nutritional requirements for successful Kratky Hydroponic gardening?
* What are the container requirements for successful Kratky Hydroponic gardening?
* What are the light requirements (measured in hours per day) for successful Kratky Hydroponic gardening?
* What types of LED plant lights are used in Kratky Hydroponic gardening?
* What equipment do you need to make a Kratky Hydroponic Garden?
* What are the steps to construct a Kratky Hydroponic Garden?
* Following prototype development from the kit provided, what benefits do you see from Kratky Hydroponic Gardening as an alternative to traditional gardening methods?

The challenges that with which I am faced in doing this project as currently designed are threefold:

1. I need to successfully germinate seeds and cuttings, grow and document the progress of the lettuce and herbs Kratky hydroponics gardens this winter using natural light and LED plant grow lights. Since I have never done this before, there is the possibility that it could fail. This would have a negative impact on my presentation since students would be seeing failed plants instead of masterfully constructed and managed plants. If the project were to fail, I would substitute videos of successful Kratky Hydroponic gardening projects as an alternative.
2. Because the project, as designed is teacher-centered, not student-centered, there is the possibility that my students will not be engaged and will not learn the information being presented.
3. Students will not have an opportunity to build their own Kratky Hydroponics Prototype in class, unless additional time is allocated. They will need to take the kit home and build the prototype at home and without further discussion with other students.

What delivery methods have you used in the past? What worked well and what didn’t? What new methods are you curious to try?  
  
In the past, I have successfully used PowerPoint presentations as a means of conveying information to public audiences.   
  
I have also designed and conducted many student-centered, hands-on, project based learning activities for teachers in K-12.

What are the resources you need and plan to use to complete your project?   
(This might be people resources, software, etc.)   
  
I will need a laptop, projector and screen to present the project as currently designed.  
  
If allowed to present the topic in a student-centered, project-based learning environment, I will need 9-10 laptop computers (1 per group), in addition to the teacher presentation center listed above. Laptops will need to have internet access, PowerPoint and Word installed. I will provide all other materials.

Create a project timeline and organize your action steps to be completed by these dates.

With the exception of preparing and conducting the PowerPoint presentation, all project activities will be photographed and documented on a regular basis.   
  
Development of PowerPoint presentation will be ongoing as documentation occurs throughout the project.

**PROJECT TIMELINE:**

* December 10 - All project equipment and materials acquired and assembled for first project photo.
* December 12 - Initiate Seed Germination
* January 1 - Set up Hydroponic grow stations
* Create and condition Hydroponic Gardens (7 herb 3 lettuce)
* January 2 - Transplant seedlings into Hydroponic containers
* January 2- March 15 - Continue to monitor, photograph and document plant growth progress. Modify management as required to insure successful growth.
* March 10 - Consider and document project findings and recommendations.
* March 10-15 - Prepare final PowerPoint presentation and required materials in preparation for March 16 draft that is due for submission.
* March 15-March 20 - Make required PowerPoint presentation modifications, based on March 16 peer review and feedback.
* March 23 or April 6 - Present
* March 24 or April 7 - Conduct post presentation assessment grading, interpret and document results as part of final evaluation
* April 13 - Conduct final self-review, based on project success and post presentation assessment results.

Examples: List activities, events, venues that will best engage priority audiences to meet the learning objectives

**4. Implement Design - COMPLETED**

**Due by: January 12, 2019**

What will you need to do to be well prepared? What are your resources and materials?  
  
The following is a list of required materials:

* Germination Tray with dome
* Seedling Heat Mat
* LED plant grow lights
* Seeds and cuttings successfully germinated
* Hydroponic Plant Food
* Hydroponic pH tester
* Hydroponic Water Tester
* Hydroponic pH control chemicals (Base and Acid)
* Fiber Grow Coco Coir Pellets
* Hydroponic Expandable Clay Pellets
* Bell Mason jars
* Food Safe Plastic Containers
* Water
* Sunlight
* Brown paper
* 3 inch Net Pot Bucket Baskets
* 2 inch Net Pot Bucket Baskets

How will you make the information relevant to your audience and how will you keep them engaged and ready to learn?

* This will be a very short, informative and engaging PowerPoint presentation.
* Crop samples from the project will be on display for students to see, touch and taste.
* Samples of all of the equipment used for the project will also be on display and passed around during the presentation.
* Students will be required to take a pre and post assessment on Kratky Hydroponics requirements, including plant nutrition, container and lighting requirements. The assessments will be administered before the start of the PowerPoint Presentation and again following the PowerPoint Presentation.

Consider logistics prior to presenting to ensure your success.

**5. Evaluate - COMPLETED**

**Due by: February 9, 2019**

What does evaluation look like for you?  
  
The evaluation criteria should consist of evaluating the following rubric:

* Did the presentation succeed in providing information on Kratky Hydroponics, nutrition, container and light requirements based on the Project Outline that was submitted for approval?
* Did students acquire the necessary information? This will be determined from the results of the pre and post assessments administered to the students.

What basic evaluation tool will work best?   
 The pre and post assessments.

Will your evaluation be immediately following the program or delayed?  
The evaluation will be delayed, pending review and grading of student pre and post assessments.  
  
After receiving and interpreting results, will you alter your strategy?   
If the presentation was not successful in conveying required information, I would alter my strategy to incorporate more opportunities for research -based, project learning to the community.

Where could you learn more about evaluation?

I could learn more about evaluation by conducting additional research on best strategies for successful teaching, learning and evaluation.  
  
I could also interview my students, peers and community members who have observed me in a teaching setting to learn from them.

Lastly, I could observe other Master Teachers and learn from them through personal observation.

Examples: Surveys (pre/post), group or individual interviews, observations.

**6. Project Draft and Discussion – Not Applicable**

**Due by: March 16**

* Complete the Seven Steps of Planning Template
* Prepare to share your presentation draft with peers.

You will get together with other participants to peer review each other’s project draft, 7-steps template and showcase plan. This will provide you with a smaller audience to run your project by prior to the showcase. You will then have some time to adjust based on the feedback.  
  
  
**The final Power Point presentation was completed and submitted in Moodle on February 4, 2019, prior to the March 16 due date for Step 6.**

**7. Project Showcase – Not Applicable**

**Due by: March 23 or April 6, 2019**

* Facilitate your action project in front of a small group of peers during the action project showcase. Ask them to provide you with constructive feedback.
* For your sharing time, be sure to:
  + State who your target audience is.
  + Model how you would engage this target audience with your presentation, demo, brochure, plan, etc…
  + You may also wish to include information such as your motivation for selecting the topic, why it is relevant to you or others, challenges you faced, ah ha moments…
* **Note the time you told us you needed.** We suggest you do a test run at home or with friends; we will be strict about time.

**The final Power Point presentation was completed and submitted in Moodle on February 4, 2019, prior to the March 23 due date for Step 7.**

**8. Self-Review – Completed March 23, 2019**

**Due by: April 13, 2019**

* Perform a self-review based on your showcase session and the overall project.
* Throughout the action project process, what was your greatest area of growth? Do you feel you have room for continued growth?
* What surprised you most about the Action Project process?
* Is there anything you would do differently? A different approach you might take?
* What could be adapted in order to finalize your project showcase materials (to have them ready to present to the public).

**Self & Peer Review:**  
I thoroughly enjoyed working on this project. The topic was something new for me to investigate and learn about and I loved the idea of being able to grow hydroponically during the cold winter months. The project was a lot of fun and certainly something I will attempt again using more complicated plant types and more sophisticated growing media.   
  
Specifically, I would like to try building a more sophisticated hydroponics system which employs the use of pumps and water reservoirs and the addition of more complicated plants such as tomatoes, cucumbers etc.  
  
The feedback that I have received from those MGV’s who reviewed the PowerPoint suggests that they found it to be very well organized, easy to understand, factually informative and data driven. They thought the presentation was very professional and loved the photos, which documented plant progress throughout the project.

I was myself surprised about how easy it was to do the project and prepare the presentation. I thing that my organizational, documentation and technology skills helped me greatly.

If I were to repeat this project, I would utilize a project-based, hands-on classroom or community setting to allow participants to learn first-hand in a research-based, collaborative learning environment. This is a fun activity, which would be very engaging.

**Assessment & Knowledge Check Results:**The final assessment on the overall effectiveness of this Action Project, as documented in Step 5 of the Action Plan Worksheet, calls for the administration, data collection and analysis of the results of pre and post assessments administered to MGV students. The data results from the knowledge checks (assessments), in conjunction with the presentation itself, are the final criteria for the overall effectiveness of the project.

A pre assessment was administered to all students present during the February 9, 2019, Face-to-Face class session. This data suggests that class participants had very limited knowledge on the subject of Kratky Hydroponics.   
  
15 students submitted pre-assessments. The average score was 20.1%.   
  
During the week of March 10, 2019, MGV students were assigned to review the Power Point presentation on Kratky Hydroponics, submitted on Moodle by S. Neumann.   
  
MGV students were asked to complete the post assessment knowledge check worksheet and bring it to class for submission at the March 16, 2019 Face-to-Face session.

The results of the March 16, 2019 Post Assessment indicate the following:  
  
12 MGV students submitted the post assessment. 7 of these 12 MGV students submitted the pre-assessment on February 9, 2019.   
  
Of these 7 MGV students, scores increased dramatically by as much as 70%. The average score on the post assessment for all students participating was 90.4% vs. 20.1% on the pre-assessment.

Although all students did not submit pre and post assessments, the overall increase of 70% on post assessment data suggests that the Kratky Hydroponics Power Point Presentation was effective in meeting the teaching and learning objectives.   
  
MGV students were able to successfully preview the Kratky Hydroponics PowerPoint Presentation on their own, understand the content, formulate conclusions, generate opinions and successfully demonstrate mastery on the post assessment. They also submitted written reviews of the overall quality and effectiveness of the project on Moodle.

Attached are the following two documents to support Pre and Post Assessment results.

Document 1 – “Neumann Kratky Hydroponics Project – Pre & Post Assessment Results – Master Gardener Class of 2019”, *Sally Neumann*

Document 2 – “Kratky Hydroponics Knowledge Check Worksheet -

ANSWER & SCORING KEY, *Sally Neumann – March 13, 2019”*

**Follow-Up Activity- Action Project**

Share your action project materials with your MGV County Coordinator. Discuss how the materials might be adapted for a future community engagement opportunity.

I believe this is a project that is well suited for a classroom and/or community teaching and learning environment.

I would establish a project-based, hands-on classroom and/or community setting to allow participants to learn first-hand in a research-based, collaborative learning environment about Kratky and other higher forms of Hydroponic growing.

I would utilize the same equipment for Kratky, create groups within the classroom or community setting, and have the work collaboratively, to research the topic, work together on the project, document findings, and present back to their classmates and/or community members.  
  
This is a fun and informative project which when done properly can be very informative, productive and engaging.