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Incorporating gardening in the classroom

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5-5-2009
Capstone
Dr. Waltz

Project Proposal

Introduction-

Meadowlark Elementary is a local school that used to have a garden and an area for bird watching that a previous principal started. Over time the area has turned to weeds and the trees/ bushes are dying. I will completely transform the area in to a beautifully maintained garden with the help of the kindergarten classes. In my proposal I will explain how I will incorporate California standards curriculum with gardening.

Background and Motivation-

Since I was very young I have always been gardening with my nana and my mom every year. When I moved away to Monterey for college I had a garden on the patio of my apartment, gardening has always been apart of my life. I feel that having gardens at elementary schools is very important because it can be directly tied in with many different curriculums from every grade.

In Mel Bartholomew's book (2005) he described a case where a teacher in California liked the idea of square foot gardening so much she uses it to teach every subject. She had the class write letters describing their garden, it helped her teach arithmetic and different kinds of math, the teacher took the idea as far as having the students perform a play on square foot gardening.

Specific nature of the problem-

The garden that I have built affects every student at Meadowlark elementary school. The area that is now an herb, vegetable and flower garden was a 15-foot by 20-

foot haven for weeds and trash. The garden now gives the front of the school a better appeal, thus helping students, parents and faculty take more pride in their school. Both the A.M. and P.M. kindergarten teachers first purposed putting a garden in the front of the school, they thought their students would really enjoy gardening. In addition to enjoying gardening the students will learn important values of sharing, nurturing and responsibility of maintaining a garden. (Bartholomew, 2005)

Importance-

I think having a garden on campus is very useful and helpful for students to learn curriculum through a hands on approach. Gardening also gives students a sense of accomplishment by seeing the beginning and end result of their hard work in the garden.

Literature Review-

At Meadowlark elementary the 5th grade class has been working with germinating pine tree seeds. I thought it would be a better idea to try and get the whole school behind the garden but most of the teachers have limited time especially with standardized testing coming up. So after speaking with the kindergarten teachers we decided that their classes would be able to benefit from a school garden. I signed the school up for the American Community Gardening Association; this association helps tell when planting is a good idea, due to climate and geographic region.

Project Description-

I plan to build three separate gardens that the kindergarten classes will learn and work in. Part of my project will incorporate standard based curriculum. I have already worked with the P.M. kindergarten class teaching about the major structures of plants. (Standard 2c. in Science) The class started germinating flower seeds last week and will be planting them in the garden once they have grown a couple inches.

The area that I am using for the garden was a previous principals bird watching area, in addition to the garden I have built birdhouses and put a humming bird feeder in

the tree directly in the middle of the garden. Per request of faculty I have not moved the fountain that she placed next to the tree, the garden will be built around the tree and fountain.

Project Details-

I will be working with both the A.M. and P.M. kindergarten class in building a community garden for the school. The class will be in the garden at least twice a week, writing, drawing, smelling, and touching the plants.

Materials Required

- 8- 2' by 6' by 12"
- 3- loads of compost
- 3-loads of 50/50 topsoil
- Vegetable seeds, herb seeds and various flower seeds
- Vinyl weed protector
- Chicken Wire

I was able to get the construction company I work for Terry Chapman's Maintenance to donate \$200. This money covered the wood and the loads of soil. I already had rolls of vinyl weed protector and chicken wire. Parents and teachers of the kindergarten class donated different flower seeds and peat pots for germinating the seeds.

My project will produce a garden that will be maintained by me through the summer then will be passed on to the 5th grade teachers in the fall. I will also be turning in a paper that will be about my experiences with the kindergarten class as well as how to incorporate gardening in to standard based curriculum. The beginning of my paper will be my experiences that I've written down in my journal throughout the process of working with the students. The second half will be lesson plans, ideas and suggestions for the implementation of gardening in to every classroom.

Timeline

3/09/2009- Got approved site to build garden

3/10/2009- 3/20/2009 Pulled out weeds and turned over soil, prepared soil for planter boxes.

3/23/2009 -Built planter boxes and put in garden.

3/24/2009- Put compost on bottom of planter boxes then filled boxes with the rest of 50/50 topsoil.

3/30/2009- Talked with kindergarten class about gardening and about plants. Discussed how plants suck up water from their roots. I also went ahead and planted most of the vegetables, herbs and a couple flowers so the students could see progress in the garden.

3/31/2009- Had students germinate seeds in their classroom and put in a sunny spot.

4/8/2009- I will be returning to the kindergarten class to see the progress of their seeds and then walk with them around the garden so that they can touch, see and smell the herbs that are growing.

4/13-4/17 students will be on spring break; I will be taking care of the garden and watering while they are away.

4/20/2009- Students will return from spring break and plant the flowers they had germinated previously.

4/23/2009- Students will return to the garden to see the progress of their flowers and other plants in the garden.

4/30/2009 Compile all of my journal entries for beginning of paper and write up lessons that I have taught the kindergarten class.

Conclusion-

This project is very important to me because I am so passionate about gardening and working with children. I believe the students will take away a greater knowledge of how plants grow and how to nurture them. I also believe this will help their self-confidence by allowing the students to see something they grew from seed to flower. This garden will be at Meadowlark for future students to have hands on learning with plants and flowers.

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Reflection

My capstone project produced results that were very different than what I had thought would happen. I feel the project turned out great, the students really had a great time learning about gardening and working in the garden. Everyday that I went to school I was greeted by warm faces and “hello Mr. Mike”. The children seemed to truly enjoy planting their seeds, watching them grow and then ultimately planting their plants in the garden. I only wish I could have worked with more classrooms but upcoming testing didn’t allow me time to work with them. I feel that my capstone overall was successful. However, some of my goals were not achieved. My capstone was successful in teaching the kindergarten classes about gardening and teaching lessons that incorporated gardening in to the classroom.

My garden was unsuccessful I feel, because it wasn’t really a “school” garden. Only the kindergarten children were able to participate. I was unable to work with other classrooms due to testing and time constraints. Perhaps I was not realistic in my goal of involving the entire school. For a project of that size, planning and development with the teachers would have needed to begun much earlier. A great idea I got from one of the parents was to have the sixth graders be gardening buddies with the kindergarteners. This would build a better school relationship between the older and younger students. It would also give the younger students mentors to look up to.

This experience also gave me an opportunity to work with several teachers and the school principal. I observed the two kindergarten teachers. It was interesting to find both of them teaching the same curriculum but using very different styles and techniques. The morning teacher was very strict and didn’t let the children explore the garden on

their own. It was difficult to teach the lessons to the morning class, it seemed that the students were scared of the teacher. My first lesson with them was a failure, I had planned to be goofy and funny while teaching the lesson and the teacher wasn't having it. She basically stopped me and taught the lesson herself. I feel that the gap between the way I teach and the way she teaches is age. She has been teaching for 50 years that's double my age and she was stuck in her ways, which I completely understand I'm studying to become a teacher and she has the experience. My experience with the afternoon teacher was much different.

When working in the evening classroom the teacher encouraged the students to explore and observe the garden every week. It was a completely different experience when teaching lesson plans in her classroom. Her students were more outgoing and involved in my lesson. The teachers teaching style was very relaxed, the kids genuinely love her and I feel that made it easier for me to teach my first lessons. The afternoon classroom felt more welcoming than the morning classroom, due to the different teaching styles.

My goal was to teach the children about gardening and incorporate this into the school curriculum. The children planted seeds, learned about germination, root structures, what plants need to grow (i.e. sun, water, nutrients). In addition we also reviewed the importance of eating fruits and vegetables and the advantages of growing your own food such as freshness, cost and convenience. In both classrooms we talked about insects both the ones that benefit a garden and those that harm plants. Another goal of mine was to show them responsibility of maintaining the garden. When the students germinated the seeds in the classroom their portable green houses had to be watered every other day. Students took turns watering the baby plants and placing them in the sun.

It was hard for me to determine if the students understood everything that I was teaching and explaining, so every week I tried to reflect upon what they had learned the week before. For the most part they remembered most of what I had taught but a couple times I got silly answers. One time in the garden students started picking weeds without me saying to do this. They had realized that part of having a garden was maintaining it, and that weeds steal water and nutrients from the plants that are in the garden. A number

of times I would come to the school and students would be yelling, “Mr. Mike, Mr. Mike, we found ladybugs. Can we put them in the garden?” This made me really excited; I could see that they were really getting it. Although the students were getting it, I started to see that the school didn’t have the capability of maintaining the garden through the end of 2009.

I was a little disappointed when I found out that they wanted me to take up most of the garden when summer came. In the beginning a couple teachers expressed interest in keeping the gardens for the school, but as time went on many people expressed their concern for the future of the garden, especially the maintenance man and the grounds keeper. Even though some teachers were really enthusiastic about the garden, and many parents stopped to talk to me about the garden and expressed an interest in the garden, the future of the garden looks grim. A 5th grade teacher expressed interest in keeping one of the beds for his classroom, but the other two would have to be taken up. After speaking with the kindergarten teachers I came up with an idea of breaking down the remaining two beds and making smaller gardens that can grow on the blacktop outside of their classroom.

There were a few things I would have changed about my project, I think having realistic expectations is one. I had this vision of the whole school being really happy that they had a garden, and that every teacher would be interested in visiting the garden at least once or twice. This would have been great but it wasn’t realistic with all the upcoming testing and limited amount of time. Another thing that I would change was where the garden was. I was shown the area in the beginning and being so excited I just went for it 100%. I failed to realize that the area they designated for my capstone only got 6 to 7 hours of direct sunlight each day. The garden was too close to the main building of the school and after two or three in the afternoon the whole garden was in shade.

I feel my capstone was successful in many ways, for one I saw the students’ energy go from 1 to 10 when I stopped by the classroom, or took the students to the garden. They were extremely excited to get their hands dirty and be a part of the gardening experience. A couple times I stopped at the local market to get food after work and I would run in to students with their parents. The parents for the most part thanked me for putting in time with the students and thanked me for getting their children

interested in gardening. I had one parent tell me that they had spent the whole weekend with their son gardening. They cleaned up their garden from last year and planted all new plants; they even invited me to see their garden.

I also feel my lesson plans were appropriate for the kindergarten classes. The lessons weren't complex they were fun and interesting. I didn't go in to technical detail about gardening I just gave them the fun overview. I would suggest for anyone doing a capstone similar to mine that keeping the atmosphere fun and relaxing is key to working with younger students. I noticed when the lessons got to serious and complex the students shut down, they became quiet and hesitant. Another great learning experience I obtained through this capstone is don't mark students as trouble makers. When I first started the project everyone especially the maintenance man kept telling me that I would experience vandalism. I was especially concerned about the sign I made for the garden. In the four months I was at Meadowlark Elementary I only had one plant stomped and it was on weekend when there was a baseball tournament at the school. I think the more you tell students about the negatives they buy in to the negative aspects as their reality and place in society.

This experience was very valuable for me as I was able to work with an age group I had no experience with before. I was also able to work with two different teachers from the same grade level. This helped me reaffirm my own teaching style, I saw in the different classrooms what worked and what seemed to hinder the students learning process. I learned that I am much more patient then I had previously thought, there were a couple times when it was difficult for me but for the most part I had a great time working with the students.

Throughout this major I feel that I have learned the most from working at the schools or through service learning. Some classes taught a teaching ideology, but it didn't always work and I feel that my experiences in the classroom have better prepared me for my future in teaching. Through my capstone experience I have realized what kind of teacher I want to be and I feel that I have a good grip on what it will take to get me there.

Lesson Plans

Planting Seeds for an Outdoor Garden

Grade Level- Kindergarten

Standards-

- Life Science Standard 2. Different types of plants and animals inhabit the earth.
- Earth Science Standard 3. Earth is composed of land, air, and water.

Subject- Earth and Life Science

Duration- 30 minutes

Description- This is the first of five lesson plans that will incorporate gardening in to the kindergarten curriculum. The students will plant the first seeds in indoor green houses.

Goal- To have students plant seeds indoor, then later plant them in the school garden.

Objectives- Students will be able to:

- Identify a seed.
- Place soil in peat pots.
- Plant seed in soil and place in indoor green house with water.

Materials:

- Seeding Soil
- Peat Pots
- Sunflower and Snap dragon seeds
- Indoor Green Houses (sold at Home Depot)
- Water

Activity

Begin by talking to the students about gardens that they have either been in or helped with. Next ask the students where they think the plants that are in the garden come from (store or grown from seed). Show the materials to the students and explain how to put the soil in the peat pot. Next have the students take their pinkie finger and poke two holes in the soil for the seeds. The students will then place their seeds in the soil and cover with more soil. Students will water their plant then place in indoor green house. The indoor green houses should be placed in the sun, a window sill is a great place.

Plant Structure

Grade level- Kindergarten

Standard-

- Life Sciences 2. Different types of plants and animals inhabit the earth C. Students know how to identify major structures of common plants and animals (e.g., stems, leaves, roots)

Subject-Life Sciences

Duration- 30 minutes

Description- This is the second of five lesson plans that will incorporate gardening in to the classroom. The students will learn about the four major parts of a plant; roots, leaves, stem, and flower.

Goal- Students will know and be able to identify the four major parts of a plant.

Objectives- Students will be able to:

- Learn four major plant parts.
- Be able to identify plant parts in garden.
- Label diagram.

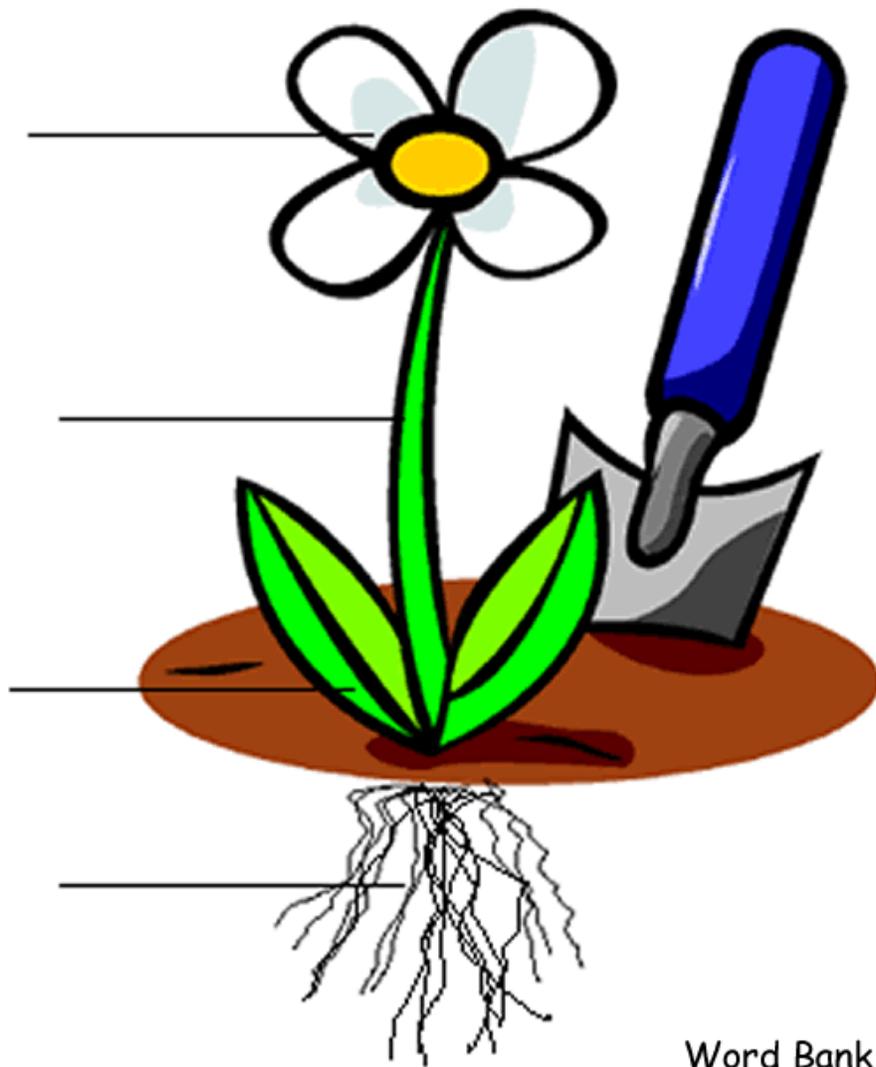
Materials:

- Dry erase markers
- Plant diagram sheet

Activity-

Take the students out to the school garden and have them all walk around and look at the plants. Ask them if they can identify any parts of the plants. Next bring them back inside of the classroom and draw a plant on the white board. Ask the students to identify the parts that are drawn on the board. Pass out plant sheet so the students can identify the major plant parts.

Label the Parts of a Plant



Word Bank
stem
roots
flower
leaves

What Do Plants Need to Grow?

Grade level- Kindergarten

Standards-

- Life Science Standard 2. Different types of plants and animals inhabit the earth.
- Earth Science Standard 3. Earth is composed of land, air, and water.

Subject- Earth and Life Science

Duration- 30 minutes

Description- This is the third of five lesson plans. The students will learn what plants need to grow; sun, water, soil, air.

Goal- Have students identify what plants need to grow.

Objectives-Students will be able to:

- Identify what plants need to grow.

Materials:

- Blank White Paper
- Crayons

Activity- Begin by discussing with the class what plants need to grow. Ask the students how plants get food? Why do plants grow up? When the discussion is over pass out a blank sheet of paper to each student with crayons. Ask the students to fold the paper in to four squares, first demonstrate how this is done. Then have the students draw what plants need to grow in each square. Students may have a hard time drawing air so suggest they draw a wind breeze.

Importance of Eating Fruits and Vegetables

Grade level- Kindergarten

Standards- Nutrition and Physical Activity

1.1 N Name a variety of healthy foods and explain why they are necessary for good health.

Subject-Health

Duration- 30 minutes

Description-This is the fourth of five lesson plans to incorporate gardening into the classroom. Students will

Goal- To have students understand that eating fruits and vegetables is important for a healthy lifestyle.

Objectives-Students will be able to:

- Identify fruits and vegetables as healthy sources of nutrition

Materials:

- Tomato-fruit
- Cucumber-fruit
- Carrot-vegetable
- Radish-vegetable
- Blank sheets of paper
- Crayons

Activity-

Discuss with the students about healthy eating. What are some healthy things they eat? Are their favorite things to eat healthy? Do they eat fruits and vegetables everyday? Do they eat 3-5 servings of vegetables and 2-4 servings of fruit each day? Have the children keep a type of food diary by drawing pictures of the fruits and vegetables they eat over the following week.

Observe and Draw

Grade level- Kindergarten

Standards-1.0 ARTISTIC PERCEPTION

Processing, Analyzing, and Responding to Sensory Information

Through the Language and Skills Unique to the Visual Arts

Students perceive and respond to works of art, objects in nature, events, and the environment. They also use the vocabulary of the visual arts to express their observations.

Develop Perceptual Skills and Visual Arts Vocabulary

1.1 Discuss visual and tactile perceptions of the natural and human-made world: what is seen and how objects feel.

1.2 Identify colors by name.

1.3 Name and describe objects by color and relative size.

Subject- Physical Science and Art

Duration- 30 minutes

Description- This is the last lesson of the five I have done to incorporate gardening into the kindergarten class. Students will walk around the garden and observe the growth.

Goal- Students will walk through garden and be able to draw a plant and name it.

Objectives-Students will be able to:

- Identify growth in the garden.
- Draw a plant that they saw in the garden.
- Be able to describe the plant.

Materials:

- Blank sheets of white paper
- Crayons

Activity- Take the students through the garden. Before entering the garden ask the students to look for changes in the garden. Which plants sprouted, what plant grew the most, what plant has the most flowers? Before leaving the garden tell the students to pick one plant from the three garden beds that they like. Have them investigate the plant they chose further by feeling the stem, smelling the plant and flowers. Now go back to the classroom and have them draw the plant they liked and try to name it.