





After-School Program Intervention

Semester Project  
Practicum in Environmental Science

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# Table of Contents

I. Problem Statement and Background.....	1
II. Goals and Objectives.....	4
III. Alternatives Analysis.....	5
A. Preliminary Alternatives List.....	5
B. Goals & Objectives Scoring Chart.....	6
IV. Strategies & Implementation.....	11
A. Strategic Plan Checklist.....	12
B. Teaching Plan Strategies.....	13
i. Organic Day.....	13
ii. Local Day .....	15
V. Monitoring & Evaluation .....	17
VI. Results .....	19
VII. Invested Time.....	21
VIII. Appendix .....	22
A. Eureka City Schools Nutrition Policy	
B. Project Correspondence	
C. Organic Activities Booklet	
D. Local Activities Booklet	
E. Bioregion Activity Sheet	
F. Bioregion Hopscotch Sheets	
G. After-School Participant Evaluations	
H. Works Cited	

## I. PROBLEM STATEMENT AND BACKGROUND

Children today do not have a clear conception of the origins of their food. When children do not understand their dependence on food and the impact on the environment of the foods they eat, a disconnect is created between people and the environments of which they are a part. This disconnect is exemplary of a non-systemic approach to teaching children. A systemic approach involves "Thinking of a collection of things as a system draws ... attention to what needs to be included among the parts to make sense of it, to how its parts interact with one another, and to how the system as a whole relates to other systems." (Center for Ecoliteracy, 2006). This lack of systemic knowledge has many far-reaching ramifications. Examples of such consequences are bad food choices, childhood obesity, diabetes, and ultimately an unclear perception of one's place within a bioregion.

The media is the catalyzing factor that contributes to the disjunction between people and the food that sustains them. The media emphasizes the fast paced lifestyle of contemporary America. The reaches of the media influence the choices and values of parents, who in turn teach their children life habits. The values of citizens and policy makers determine the capabilities and focus of education systems. Such values are strongly emphasized by media projections of the "American Life" and the corresponding values of true Americans.

The health consequences of the general disconnect between people and their food result in unhealthy food choices. Research has shown that eating habits, "developed during childhood continue into adulthood," (Powers, 2005) thus emphasizing the importance of healthy eating habits. Childhood health problems from unhealthy food choices range from "immediate health problems such as dental caries and overweight and long term health problems such as heart disease, cancer and diabetes" (Powers, 2005). In a country where the numbers of overweight children and adolescents are steadily rising, the social and economic ramifications will be far reaching.

The environmental ramifications for the disconnect between people and their foods is the loss of the concept of place. When people lose touch with their food and its origins they lose hold of the fact that humans are inextricably linked to the earth and its resources. When we as a human race lose touch with the ability to see things whole we lose the ability to “see both the wounds we have inflicted on the natural world in the name of mastery and those we have inflicted on ourselves” (Orr, 1992). The idea that humans are somehow outside of and more powerful than their surroundings, leads to dangerous territory.

Nutrition programs have been used to enforce healthy food choices within classroom settings. The city and school districts of Davis have implemented and experimented with several programs emphasizing nutrition and gardening. The interface of nutrition programs within schools exposes children to the benefits of healthy food choices at an age when their eating habits are still developing.

The Nutrition to Grow On program seeks to “teach children about healthy eating habits while simultaneously teaching them where their food comes from” (Morris, 2002) by using classroom gardening. The program incorporates classroom activities, which meet content standards, student gardening activities and parent newsletters to enhance student knowledge regarding nutrition and the origins of their foods. The program has “improved the nutrition knowledge of the students” (Morris, 2002) as well as their preferences for certain vegetables.

The Farm to School Connection is a program that was implemented in the Davis school system. The program seeks to educate children about the systemic nature of food, learning and agriculture, while also educating about healthy food choices. The program included venues of education such as “farmers’ market salad bars, classroom education, farm tours and waste management” (Graham, 2004) to illustrate the importance of nutrition. As a result of the program “participation in the school lunch program increased with the addition of the salad bars” (Graham, 2004) indicating that student knowledge and preference had been affected by the implementation of the program.



The programs that have been implemented in Davis have been created and institutionalized by professionals working for UC Davis Department of Nutrition, the California Department of Education, and the UC Sustainable Agriculture Research and Education Program in cooperation with local schools. The working relationship with UC Davis and the proximity of the Department of Education in Sacramento, make Davis an ideal locale for the creation of such forward-looking programs. California's Central Valley agriculture production is also a factor that contributes greatly to the exposure of food origins and their necessity in the education system.

The resources and conditions of Humboldt County are greatly different than those of Yolo County, where Davis is located. Yolo County is centrally located within the state and very close to the state capital as well as the bay area. Yolo County has a greater population density with a smaller number of the population living in poverty 11.1% (California Food Policy Advocates). Whereas, Humboldt County is isolated behind the redwood curtain and has population that is much dispersed. There is a greater number of individuals living in poverty, 19.5% (California Food Policy Advocates) with a consequent greater number of children living in poverty. The economies of Yolo and Humboldt counties are also very different, which in turn influence the funding available for the respective education systems.

The gardening and nutrition education programs that are taking place within Humboldt County are much less prevalent than those that are being implemented in Yolo County. Currently the nutrition and gardening education programs that are instituted are primarily by Humboldt County Farm to Schools and individual teachers. Farm to Schools suffers from the lack of a centrally located distribution point as well as an apparent lack of farmer interest in the program. Individual teachers who attempt to incorporate gardening in their classrooms suffer from a lack of time in the day, managing to fulfill state mandated content standards, as well as the summer management of their gardens.

## II. GOALS AND OBJECTIVES

Goal #1: To promote and inform students of local crops within the Humboldt County bioregion.

- Improve the knowledge base of local products by 30% within the span of a two-week program.
- Define the bioregion by introducing local-seasonal products from within the bioregion.

Goal #2: To disseminate common myths and aversions of fruits and vegetables.

- Expand children's fruit and vegetable preferences with taste-tests, with an increase of preference of 40% for 50% of the introduced foods.
- Promote fruits and vegetables as healthy and tasty snacks, by introducing at least 5 healthy snacks.

Goal #3: Provide tangible evidence of the garden experience as a culmination of their studies.

- To provide a hands-on opportunity for garden-enhanced learning with a garden activity that will allow each student a plant start by the end of the program.

### III. ALTERNATIVES ANALYSIS

The following is a list of solutions created to combat the problem stated in section I. Alternative solutions were discussed and then weighed against whether or not they were within our reaches of feasibility. The remaining feasible options were then compared to the goals and objectives to determine if they would actually meet our specific criteria. This process yielded four feasible alternatives that also met our goals and objectives. After judging how well each alternative would meet the goals and objectives we determined that our preferred alternative would be the after-school program intervention.

#### Preliminary List of Alternatives

Key:

Underline means "feasible"

*Italics* means alternative meets goals and objectives

1. Vending machines out of Humboldt schools
2. Redo Humboldt county food standards
3. *School garden – ALTERNATIVE 1*
4. School curriculum
5. All 6<sup>th</sup> graders must participate in community garden
6. Ban candy from Humboldt county
7. Bring 4H or FFA to classrooms
8. *Field trips to local gardens/farms ALTERNATIVE 2*
9. Farmers to classroom
10. Trip to Coop
11. List of websites that teach about food
12. Trip to CCAT
13. Movies and PBS broadcastings
14. Stupid food songs
15. *After school program intervention ALTERNATIVE 3*
16. Sunday school presentation
17. *Farmers market booth for kids ALTERNATIVE 4*
18. TV spot/PSA on Saturday mornings
19. Protest in front of McDonalds
20. Surgeon General warning on candy
21. Free food/produce to kids
22. Workshop for kids at HSU
23. Workshop for EYH
24. Speaker series at a school
25. Salad party
26. Humboldt county Nutritionist talk to schools/get involved
27. Start our on organic vegetarian school
28. Provide parent info at PTA meetings



## GOALS & OBJECTIONS SCORING CHART

The following is an assessment of 4 feasible alternatives that meet the project's goals and objections. Alternatives are assessed on a scale of 1 -> 5 based on how well they meet the goal/objective based on effectiveness. A score of a 1 constitutes not effective and a 5 constitutes very effective. Goals were determined by averaging the objective values.

	<b>Alternative 1:</b> School garden	<b>Alternative 2:</b> Field trips to local gardens/farms	<b>Alternative 3:</b> After school program intervention	<b>Alternative 4:</b> Farmers market booth for kids
<b>Goal 1:</b> Promote and inform students	3	5	4	5
<b>Objective:</b> Improve knowledge	3	5	4	5
<b>Objective:</b> Define Bioregion	2	5	4	4
<b>Goal 2:</b> Disseminate myths and aversions to healthy foods	4	3	5	5
<b>Objective:</b> Expand produce preference with taste tests	4	3	5	5
<b>Objective:</b> Promote produce as tasty snacks	4	3	5	5
<b>Goal 3:</b> Provide garden experience	5	2	5	1
<b>Objective:</b> Provide hands on garden	5	2	5	1



opportunity				
<b>Total score for all goals (out of possible 15)</b>	<b>12</b>	<b>10</b>	<b>14</b> Preferred Alternative	<b>11</b>

**ALTERNATIVE 1: School Gardens**

Introducing a garden to a school campus is an effective way to give students hands on experience with the plant cycle. It allows students to participate in planting, harvesting, and the consumption of garden products. A downfall of school garden is the school year. Schools are only in session nine months out of a twelve-month year. Leaving a three-month time frame where the garden goes unattended. A second downfall is space on a school campus. Most Humboldt County schools are under construction and do not have the space for a school garden. A third downfall is the low teacher retention rate in Humboldt County. Finding a teacher willing to incorporate a garden program into their curriculum that is also committed to staying in Humboldt County is a challenge.

**ALTERNATIVE 2: Field trips to local gardens/farms**

Taking students to an actual local garden or farm is an effective means to introduce students to local gardening practices when an on-campus garden is not possible. It introduces students to the idea of bioregion and growing standards/seasons. A downfall to fieldtrips is transportation. A bus might not be accessible for a class to use to transport students from a school to a local farm. A second downfall is cost. Teachers have a very limited school year budget and transporting students across the county to farms could exceed their budget. A third downfall to a farm fieldtrips is finding farmers/gardeners willing to talk to students about what they grow and why.

**ALTERNATIVE 3: After School Program Intervention (Preferred Alternative)**

The primary strength of this alternative is that learning materials can be created to specifically meet project goals and objectives. Children could be exposed to lecture and activities that demonstrate local and organic produce. Another strength of this alternative is that it could reach a range of ages within the after school program.

Weaknesses for this alternative include finding a participating school, fitting the alternative into the after school curriculum, and it will reach a limited population of students.

Costs of this alternative include: costs for providing children with local produce examples, vegetable starts (or beans), planting materials like soil, tools and pots.

Resources available to this alternative are CCAT, campus compost program, after school program coordinator, and online learning resources.

The project will require a fair amount of prep time for course materials, coordinator meetings, and securing necessary materials. Also the alternative will require extra time obtaining or starting vegetable starts or seeds. The alternative will require an in class time investment, as well as travel time, and clean up time.

#### **ALTERNATIVE 4: Farmers Market Booth**

The main strength of this alternative is that it can be tailored to specifically meet project goals and objectives. Interactive diagrams and hands on examples could be made available to children using this alternative. Another strength of this alternative is that the exposure would not only be to children, but all people at the farmer's market. Parent education and interaction are positive benefits of this alternative.

The weaknesses of this alternative are centered on the timing and participation levels of farmers markets. Farmers markets take place based on availability and seasonality of crops, they begin operating in late April to May. The timing of farmer's market startup does not correspond well with the timeframe necessary for project implementation. Also, the primary participants in farmer's markets are people who may already have a healthy perspective on the importance of nutrition, meaning the likelihood that children visiting farmers market have healthier diets. The problem is that children who may not have healthy diets are probably not at farmers market.

The costs of this alternative have the potential to be heavy. In order to acquire a spot within farmers market, we would have to pay an entry fee. Not to mention, we would also have to supply the table, food, and various other equipment for making the booth effective.

Resources available to this alternative are limited to CCAT, possibly. This alternative would be more successful if a joint booth were established in which the alternative shared a

space with a local farmer. However, finding a participating farmer could be difficult, as the incentive is to maximize profit by maximizing product availability.

The time investment of this project is heavy as project implementers would be required to staff the booth for at least two farmers' market days, which would include setup and tear down of booth. The time investment for the development of the booth would not necessarily be a constraint, however staffing it would be.



#### IV. STRATEGIES AND IMPLEMENTATION

The strategies used to convince key people to allow us to implement the project were based on a series of email solicitations. The emails described our wish to interact with children and teach them about foods and gardening in an attempt to combat children's lack of food knowledge. Preliminary solicitations were directed at the Director of School and Community Relations, who then forwarded our request to all County school principals. We then directly emailed Eureka City principals; examples of these solicitations are available in the Appendix.

## STRATEGIC PLAN CHECKLIST

<b>ACTION</b>	<b>GROUP MEMBER</b>	<b>CONTACT</b>	<b>DEADLINE</b>
Contact Humboldt County Nutritionist	Nicole	Kathleen Embertson	2/13/2006
Solicit an interested school	Nicole	All Eureka City School Principals	2/20/2006
Contact the participating school	Nicole	Karen Rudin	3/1/2006
Meet with Karen Rudin at participating school	Nicole	Karen Rudin	3/17/2006
Research lesson material for school intervention	Mikayla & Nicole		3/27/2006
Develop lesson plans for after school intervention	Mikayla		3/28/2006
Lesson plan submitting to Karen	Mikayla & Nicole	Karen Rudin	3/29/2006
Gather Materials:			
Soil	Mikayla	Gregory Hein	4/11/2006
Eggshells	Nicole	Melissa Schwartz	4/11/2006
Worms	Mikayla	Gregory Hein	4/11/2006
Buckets (2)	Mikayla	Noelle Melchizedek	4/11/2006
Watering can	Mikayla	Mikayla Zumwalt	4/11/2006
Seeds	Mikayla	Mikayla Zumwalt	4/11/2006
Permanent marker	Nicole	Nicole Hugh	4/11/2006
Crayons	Nicole	Karen Rudin	4/11/2006
Organic produce	Mikayla & Nicole	Mikayla & Nicole	4/11/2006
Classroom printouts	Mikayla	Mikayla Zumwalt	4/11/2006
Table	Nicole	Jennifer Warren	4/11/2006
Digital camera	Mikayla	NR Stockroom	4/11/2006
Hopscotch cutouts	Nicole	Nicole Hugh	4/26/2006
U-Pick operations handout	Nicole	Nicole Hugh	4/26/2006
Sidewalk chalk	Nicole	Tamara Carpenito	4/26/2006
Local produce	Mikayla & Nicole	Mikayla & Nicole	4/26/2006
Camera	Mikayla	NR Stockroom	4/26/2006
Flagging Tape	Mikayla	Terry Henkel	4/26/2006
Stickers	Nicole	Nicole Hugh	4/26/2006
Map	Mikayla	Geography Dept, Office of Ed?	4/26/2006
Classroom printouts	Nicole	Nicole Hugh	4/26/2006
Bring back worms	Mikayla	Mikayla Zumwalt	4/26/2006
Organic Day with K-2	Mikayla & Nicole	Karen Rudin	4/12/2006
Organic Day with 3-5	Mikayla & Nicole	Karen Rudin	4/12/2006
Local Day with K-2	Mikayla & Nicole	Karen Rudin	4/26/2006
Local Day with 3-5	Mikayla & Nicole	Karen Rudin	4/26/2006

**ORGANIC DAY: 12 April 12, 2006**

Goal: Disseminate common myths/aversions of produce

Objective: expand preference of 40% of half of introduced foods

Objective: promote produce as healthy snacks, 5 snacks

Goal: Provide tangible evidence of the garden experience as a culmination of their studies.

Objective: To provide a hands-on opportunity for garden-enhanced learning with a garden activity that will allow each student a plant start by the end of the program.

**PLANT: 45 kids count off 1-2**

Planting Group: The 1's (approx 22 kids)

Fill egg with soil

Wiggle your finger, make a small hole

Put a bean plant seed in the hole

Gently cover with soil

Give it a little water

Coloring Group: The 2's (approx 22 kids)

Color the 1st three pages

If you finish early list your favorite fruits and vegetables, why do you like?

**TALK: All kids**

What is organic?

- **grown without the use of artificial fertilizers and pesticides.**
- **grown by working with nature rather than against it,**
  - **recycling natural materials to maintain soil fertility**
  - **natural methods of pest and disease control**

What is organic farming?

- Organic farming is a farming system which depends upon the development of biological cycles, using crop rotation and making the most of natural fertilizers like animal manures and vegetable wastes.
- Worm facts
  - **Earth worms don't have eyes**
  - **Earth worms don't have teeth**
  - **Worms breath through their skin**
  - **Worms don't have bones**
  - **Earthworms tunnel thru the soil, making it light and airy so that plants can spread their roots out as they grow. Imagine how your feet feel when you're wearing a pair of shoes that are too tight. That's how plants feel when the soil is hard around their roots. Worms make space for water and oxygen in the soil**

**TASTE: All kids**

Organic bananas. Do they taste any different? How?

Banana snacks: peanut butter and bananas, yogurt and bananas, can you think of any fun ways to eat bananas

**TALK: All kids**

Why do people like organic food?

- **No weird chemicals**
- **Just like nature made it**
- **Tastes better, what do you think?**

**BINGO: All kids**

2-3 games, have markers, choice of prizes



**LOCAL DAY: 26 April 2006**

**Goal:** To promote and inform students of local crops within the Humboldt County bioregion.

**Objective:** Improve the knowledge base of local products by 30% within the span of a two week program.

**Objective:** Define the bioregion by introducing local-seasonal products from within the bioregion.

**Goal:** To disseminate common myths and aversions of fruits and vegetables.

**Objective:** Expand children's fruit and vegetable preferences with taste-tests, with an increase of preference of 40% for 50% of the introduced foods.

**Objective:** Promote fruits and vegetables as healthy and tasty snacks, by introducing at least 5 healthy snacks.

**Organic Day Re-hash:** plants and why organic good (5 min)

- How are the baby plants doing? Show of hands for survivors
- Who can tell me why organic is good?

**Natural Accounting Activity-**break into groups of six (20 min)

- Prizes for the group with the most finds!!!
- Go out to the plots and make a list of everything you find: plants or animal
- 5 min at each plot, then we rotate
- Come back and sit down
- Compare at the end AND prizes!!!

**Farmers Market:** Hand out packets (3 min)

- What kinds of foods have you seen there?
- In your packets, a list for you and your parents of farmers markets in the area
- Farmers markets are great places to find local foods
- LOCAL:

- It's fresher
- It's in season
- It has not traveled a really really long distance
- Sometimes it's organic

**\*\*\*\*SNACK\*\*\*\***

**Mapping Food Activity: (10 min)**

- The fruits/veggies that grow here depend on the weather.
- What is the weather like here?
- Fruits/veggies that can not grow here: pineapple, banana, corn, orange, coconut, kiwi, tomato
- Tell where non-locals grow → corn, orange, tomato, kiwi
- Fruits/veggies that do grow here, what can we find at local farmers markets?
- Local foods are foods that grow here: Apple, strawberries, green beans, nectarines, blueberries, grapes

**Local Hopscotch:**

- Jump on the local foods, don't jump on the exotic foreigners

## V. MONITORING AND EVALUATION

The goals and objectives that were implemented by the project were fully met. The success of meeting the goals and objectives is due to the multi-faceted exposure techniques used by the program.

Goal #1: To promote and inform students of local crops within the Humboldt County bioregion.

- Improve the knowledge base of local products by 30% within the span of a two week program.
- Define the bioregion by introducing local-seasonal products from within the bioregion.

This goal was met by its objectives which assisted reinforcing Humboldt County's bioregion. The first objective was met by providing participants with lists of local foods and availability of farmers markets' times and locations. In similar fashion participants were also provided with lists of local U-Pick operations. This objective was also met when local foods were introduced and tasted during the program. The second objective of this goal was met by discussing the growing conditions of Humboldt County in reference to the growing conditions of other places in the state of California. The discussion was facilitated by leading questions and the integration of a large classroom map.

Goal #2: To disseminate common myths and aversions of fruits and vegetables.

- Expand children's fruit and vegetable preferences with taste-tests, with an increase of preference of 40% for 50% of the introduced foods.
- Promote fruits and vegetables as healthy and tasty snacks, by introducing at least 5 healthy snacks.

The second goal was met. The first objective was met by providing children with local and organic produce and was measured for preference by hand-raising and thumbs up/thumbs down reaction responses. The second objective was met because the participants were provided

with two fruit/vegetable snacks, a growing vegetable that could be eaten as a snack, as well as activities which inspired curiosity for new fruits and vegetables.

Goal #3: Provide tangible evidence of the garden experience as a culmination of their studies.

- To provide a hands-on opportunity for garden-enhanced learning with a garden activity that will allow each student a plant start by the end of the program.

The last goal was successfully met; each participant took part in the egg starter activity.

The activity yielded each child a bean starter seed that would be later planted in the ground. The hands-on planting activity gave participants the experience of filling a container with soil and planting a seed.

Evaluation questionnaires will be provided for the after school program coordinator and her staff. The input of the coordinator is important because she approved the project and all activities and lesson plans were submitted to her for approval. The after school program staff that aided the projects' implementation, are equally valuable because the staff actually participated in the project's activities. A sample of the questionnaire is available in the appendix. Questionnaires will be dispersed on May 1, 2006. As the projects' implementation is completed, the questionnaires will be returned and evaluated within 2 weeks.



## VI. Results

The goals of this project were to promote and inform students about Humboldt County's bioregion crops, disseminate common myths and aversions children have about fruits and vegetables, and to provide students with a tangible gardening experience. By meeting our goals the, students were able to self-discover how closely humans are connected to food. Self-discovery was facilitated by the projects' activities and discussions, which were specifically tailored to meet our goals and objectives. Our project resulted in meeting all three of these goals and consequently all the objectives associated with them.

In order to promote local foods we provided students with farmers market and U-pick operation information sheets. The sheets promoted locations and times in which to buy local crops. Many of the students were very excited to see that they could pick local blueberries with their families and many of the parents appreciated the list of phone numbers and locations of such operations. We then discussed the growing conditions of the Humboldt County bioregion and explained that not all foods can grow in our dark wet climate. This promoted local foods by making them sound incredibly special since only, they can grow in our area. After promoting how special Humboldt County food is, we let the kids taste some local spring salad mix. This did two things for our project. First it gave the students a chance to taste local food and second it disseminated any myths student might have had about lettuce tasting gross. Students enjoyed the spicy lettuce and said that they would eat it again if it were presented to them.

In order to disseminate any myths or aversions to fruits and vegetables we provided different snacks to the students. The bingo activity that was played on the first days also aided in this by introducing students to pictures of fruits and vegetables that they had never heard of before. One student said that she was going to go home and ask her mother to make rutabaga for dinner. Other students had never seen a picture of an artichoke or known that peas come in a pod until seeing it on our bingo game.

Providing a gardening experience for students was a challenge. All the Eureka City Schools that were enthusiastic about working with our project were in the midst of major reconstruction projects. This meant that the schools could not guarantee us a place to set up a school garden. So we created a gardening experience that allowed the students to experience gardening at school and then take home with them that afternoon. Our eggshell starts were a hit - students really enjoyed playing in the compost. Two of the egg starts survived the trip home and were eventually planted into the ground.

**INVESTED TIME**

Date	Research	Implementation	Write-ups
1/30/2006	MZ (2hrs) NH (2hrs)		
2/1/2006	MZ (2hrs) NH (2hrs)		
2/6/2006	MZ (2hrs) NH (2hrs)		
2/7/2006			MZ (4hrs) NH (4hrs)
2/8/2006	MZ (2hrs) NH (2hrs)		
2/13/2006	MZ (2hrs) NH (2hrs)		
2/15/2006	MZ (2hrs)	NH (1 hr)	
2/20/2006	MZ (2hrs) NH (2hrs)		MZ (3hrs)
2/22/2006	MZ (2hrs) NH (2hrs)		
3/1/2006	MZ (2hrs) NH (2hrs)	NH (1hr)	
3/8/2006	MZ (2hrs) NH (2hrs)		
3/17/2006		NH (2 hrs)	
3/20/2006	MZ (2hrs) NH (2hrs)		
3/22/2006	MZ (2hrs) NH (2hrs)	MZ (1hr) NH (1hr)	
3/26/2006			MZ (4hrs) NH (4hrs)
3/27/2006	MZ (2hrs) NH (2hrs)		
3/28/2006			MZ (1hr)
3/29/2006	MZ (2hrs) NH (2hrs)		
4/3/2006	MZ (2hrs) NH (2hrs)		
4/5/2006	MZ (2hrs) NH (2hrs)		
4/9/2006			MZ (2hrs) NH (2hrs)
4/10/2006	MZ (2hrs) NH (2hrs)		
4/11/2006		MZ (5hrs) NH (2 hrs)	
4/12/2006		MZ (3hrs) NH (3hrs)	
4/17/2006	MZ (2hrs) NH (2hrs)		
4/19/2006	MZ (2hrs) NH (2hrs)		
4/24/2006	MZ (2hrs) NH (2hrs)	MZ (1hr) NH (1hr)	
4/25/2006		MZ (4hrs) NH (3 hrs)	
4/26/2006		MZ (3hrs) NH (3hrs)	
4/30/2006			MZ (3hrs) NH (3hrs)
5/1/2006			MZ (6hrs) NH (6hrs)
5/3/2006		MZ (1hr) NH (1hr)	
5/10/2006			MZ ( 3 hrs) NH (3 hrs)
5/11/2006			MZ ( 2 hrs) NH ( 2hrs)
<b>Totals</b>	<b>Research</b>	<b>Implementation</b>	<b>Write-ups</b>
<b>MZ</b>	<b>38 hrs</b>	<b>18 hrs</b>	<b>28</b>
<b>NH</b>	<b>36 hrs</b>	<b>18 hrs</b>	<b>24</b>

NH = Nicole Hugh  
 MZ = Mikayla Zumwalt

# Appendix



# Draft

## EUREKA CITY SCHOOLS NUTRITION POLICY

The Governing Board recognizes that students need adequate, nourishing food in order to grow, learn and maintain good health. It further recognizes that significant research indicates a positive relationship between adequate nutrition and learning resulting in academic success.

The Board will commit that all schools will participate in available child nutrition programs, including breakfast, lunch, after school snacks, child care and summer food service.

The District will provide adequate resources (personnel, equipment, ongoing maintenance, technology) to implement the Nutrition Policy.

The implementation of the Nutrition Policy and related Health Education Policy will be supported by all employees of the district.

Parents/guardians will be encouraged to support the district's nutrition education efforts by considering nutritional quality when selecting any snacks which they may donate for occasional special events

### **Quality of Food**

The Superintendent or designee shall ensure that the meals offered by the district's food service program meet all legal requirements for participation in the National School Lunch and School Breakfast Programs.

The Superintendent or designee shall ensure that food sales by school-related groups and the use of vending machines are in compliance with state and federal law and do not impair student participation in the district's food service program.

Sanitation and safety procedures shall comply with the requirements of the California Uniform Retail Food Facilities Law as set forth in Health and Safety Code 113700-114455.

All food available on school district property, including food sold by the Food Service Department, through vending machines and by student sales, will meet or exceed nutritional standards established by the District.

All foods on school premises shall be:

- Selected so as to contribute to student's nutritional well-being and the prevention of disease.
- Prepared in ways which will appeal to students, retain nutritive quality and foster lifelong healthful eating habits.

# Draft

- Provided to give a variety of healthy choices at all sites including ethnic and cultural favorites.

Students will be involved in the selection, tasting and marketing of healthy foods that appeal to students.

Healthy food choices (fresh fruits and vegetables, whole grains, dairy products) should be promoted in all district activities involving staff, students and community.

## **Student Access**

All school campuses will ensure that each student will have access to healthy food choices through:

- Universal breakfast offered in the classroom to at least K-6 students.
- Variety of venues at the high school that offer the highest quality foods for the lowest possible cost.

Access to fundraising through food sales will be equitable for all classes and/or student organizations.

## **Maintenance of a Healthy Environment**

All school sites will provide an environment where healthful eating behaviors are the norm and are modeled and reinforced.

Adequate space in a pleasant surrounding will be provided to eat meals as well as appropriate time to eat, relax and socialize.

The Superintendent or designee will ensure practices are in place to foster mutual respect between service providers, school personnel and students.

# Draft

## ADMINISTRATIVE REGULATIONS:

### Quality of Food - Nutritional Standards

All food sold on school campus must be from one or more of the following categories:

- Milk and dairy products, including cheese, yogurt, frozen yogurt and ice cream.
- Full-strength fruit and vegetable juices and fruit drinks containing 50 percent or more full-strength fruit juice, and fruit nectars containing 35 percent or more full-strength fruit juice
- Fresh, frozen, canned, and dried fruits and vegetables
- Nuts, seeds, and nut butters
- Nonconfection grain products including crackers, bread sticks, tortillas, pizza, pretzels, bagels, muffins, and popcorn.
- Any food receiving prior approval by Food Service Department

In addition the food items must meet the following criteria:

- Not more than 35 percent of the total calories of the food item, excluding nuts or seeds is from fat
- Not more than 35 percent of the total weight of the food item, excluding fruits or vegetables, is composed of sugar

The Food Service Department will provide a list of foods that meet these criteria.

A production system will be developed and implemented to reduce the use of prepackaged foods and increase the use of basic fresh foods that emphasize fruits, vegetables, whole grains and dairy foods which are low in fat, added sugars and sodium.

The use of fresh fruit and vegetables will be encouraged by making fruit and vegetables available at all points where food is sold and promoting the intake of 5 servings of fruits and vegetables per day.

During school hours, food sales, including vending machines, that are accessible to students shall not sell or dispense:

- sodas or drinks that contain caffeine or a high concentration of sugar
- candy
- high fat chips or similar products that do not meet the above nutritional standards.

Beverages that may be sold to students are water, milk, 100 percent fruit juices, sport drinks or fruit-based drinks that are composed of no less than 50 percent fruit juice (or 35% for nectars) and that have no added sweeteners.

During school hours home prepared products will not be allowed to be sold on campus due to the potential of food borne illness. However, site approval may be requested for special occasions at the schools involving foods that may not meet these standards.



# Draft

These foods and service methods must meet food safety standards as specified by the Food Service Department. (i.e. multicultural events)

The District will provide to parents information on safe and healthy foods that would be acceptable for special events (i.e. classroom parties).

To the extent permitted under the National School Lunch and School Breakfast Programs, students in all grades shall be allowed to decline a certain number of meal items which they do not intend to consume.

## **Student Access**

An efficient and cost effective system will be implemented for preparing and distributing healthy foods to all sites including the use of carts, vending machines and classroom service.

Marketing of the school lunch program will use a wide variety of school resources including students, special food promotions, PTSA's.

High school administration will evaluate a closed campus and its effect on food services, attendance, school spirit, community relations, etc.

Vending machines that contain beverages that do not meet the District nutritional standards shall remain locked or be rendered inoperable until after the end of the last school period.

The Food Service Department will enter into partnerships with interested student groups to provide food selling opportunities while sharing labor and profits from such events.

The Food Service Department will work with administration at each school site to establish a process for approving sale of food by clubs, classes, and student organizations during the school day and to provide equitable access and distribution of revenues for appropriate uses.

## **Maintenance of a Healthy Environment**

Advertising of food and beverages on vending machines should promote healthy food choices.

All primary school administrators should evaluate schedules and if possible promote play time before eating lunch.



# Draft

## **NUTRITION EDUCATION/PHYSICAL EDUCATION BOARD POLICY**

The Governing Board recognizes that significant research proves that there is a positive relationship between adequate nutrition, physical activity and academic success. Therefore, the District will provide

- updated health textbooks and other resources
- staff development in nutrition and physical education
- nutrition education and physical education K-12 which is age appropriate, provides hands on learning and is integrated into the core curriculum.

The District will seek ways to collaborate and coordinate nutrition education activities with community resources. (i.e. Humboldt County Department of Health and Human Services).

### **ADMINISTRATIVE REGULATIONS:**

District Curriculum Committee will review and report on the state of health education K-12 including nutrition education.

During orientation to new teachers and classified staff, the District Nutrition Policies will be reviewed and discussed.

Annually food service staff will be provided training in food safety, marketing, preparation and service of healthy menu items.

In cooperation with community health agencies, nutrition lessons will be developed and provided for teachers to integrate into science, math and health curriculum.

# Draft

A District Nutrition Advisory Committee (students, parents, community members, staff representing all school sites) will meet a minimum of twice annually to review implementation of these policies and regulations.

The committee further recommends the District consider the following items to further improve the quality of food service and nutrition education.

- Explore/offer nutrition class as a science elective for high school students.
- Provide all students with food service orientation annually.
- Develop parent nutrition education opportunities
- Explore a community kitchen
- Support physical activity throughout K-12. Develop activity supervisors on the playgrounds instead of monitors.
- Explore garden education at each site.

Nicole

This sounds like a good project. However, we have a partnership with Americorp and Humboldt County Office of Education. They are coming in on a regular basis and have been for the past two years to teach nutritional education/lessons that include hands on projects to our primary classes. Upper grade classes get the information as part of their health unit. So while I thank you for the interest in working with my students, I believe we are covering nutrition better than some.

Lee Ann Lanning

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**From:** Nikki hugh [mailto:[nicole\\_hugh@hotmail.com](mailto:nicole_hugh@hotmail.com)]

**Sent:** Monday, February 20, 2006 3:27 PM

**To:** Lee Ann Lanning

**Subject:** HSU Senior Project

Hello,

My name is Nicole Hugh and I am an Environmental Science senior at HSU working on my senior project. My project partner (Mikayla Zumwalt) and I chose to design a project around children and the lack of food knowledge in the school curriculum.

What we ultimately want to do is find a teacher/school that would let us come in teach the kids a few lessons and then plant a garden on their campus (but we do have other ideas if this is not feasible).

We were wondering if we could come in and discuss the possibility of using your school for our project. If this is not a possibility we would appreciate any advice that you might have as to how we might be able to accomplish our goals.

Thank you

Nicole Hugh and Mikayla Zumwalt

Hi Nicole,  
Thanks for your interest in Eureka City Schools. This sounds like a worthy senior project. I will forward your e-mail onto our principals.  
Sincerely,  
Sheldon

---

Sheldon J. Reber  
Director of School and Community Relations  
Eureka City Schools  
3200 Walford Avenue  
Eureka, CA 95501  
<<http://www.eurekacityschools.org>>  
707-441-2416  
FAX 441-3341  
rebers@eurekacityschools.org  
A member of the California School Public Relations Association  
and the National School Public Relations Association

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On 2/20/06 3:24 PM, "Nikki hugh" <[nicole\\_hugh@hotmail.com](mailto:nicole_hugh@hotmail.com)> wrote:

Hello,  
My name is Nicole Hugh and I am an Environmental Science senior at HSU working on my senior project. My project partner (Mikayla Zumwalt) and I chose to design a project around children and the lack of food knowledge in the school curriculum.  
What we ultimately want to do is find a teacher/school that would let us come in teach the kids a few lessons and then plant a garden on their campus (but we do have other ideas if this is not feasible).  
We were wondering if we could come in and discuss the possibility of using your school for our project. If this is not a possibility we would appreciate any advice that you might have as to how we might be able to accomplish our goals.  
Thank you  
Nicole Hugh and Mikayla Zumwalt



Nikki – I would love to have you and your project partner work with our students at Lafayette. However we will soon be undergoing major construction so I am unable to dedicate any space to your project. Current space available will most likely be ripped up with new buildings being constructed or renovation taking place. I wish you luck and believe your project sounds worth while.

Laurie

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**From:** Nikki hugh [mailto:[nicole\\_hugh@hotmail.com](mailto:nicole_hugh@hotmail.com)]  
**Sent:** Monday, February 20, 2006 3:28 PM  
**To:** Laurie Alexander  
**Subject:** HSU Senior Project

Hello,

My name is Nicole Hugh and I am an Environmental Science senior at HSU working on my senior project. My project partner (Mikayla Zumwalt) and I chose to design a project around children and the lack of food knowledge in the school curriculum.

What we ultimately want to do is find a teacher/school that would let us come in teach the kids a few lessons and then plant a garden on their campus (but we do have other ideas if this is not feasible).

We were wondering if we could come in and discuss the possibility of using your school for our project. If this is not a possibility we would appreciate any advice that you might have as to how we might be able to accomplish our goals.

Thank you

Nicole Hugh and Mikayla Zumwalt

Hey Nikki - just wanted to let you and Mikayla know that the March 2 meeting has been moved to \*March 9th\* - maybe you can make it? 3:30pm in the Teachers Conference Center at Hum Cty Office of Education. Thanks again for meeting up on Monday evening, I look forward to continuing to chat about plans for school gardens! Yay!

=) Shannon Tracey  
School Garden Coordinator  
Humboldt County Farm to School  
445-3166/setracey@yahoo.com

Nikki – One thought I have is that you would work with my afterschool program coordinator. We have about 100 of our students here each afternoon from 2:05 for a couple of hours; depending on the student. They are some of our neediest children, but are great to work with. What do you think? I have forwarding this information to Karen Rudin who is the after school coordinator. She is fabulous to work with.

Laurie

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**From:** Nikki hugh [mailto:[nicole\\_hugh@hotmail.com](mailto:nicole_hugh@hotmail.com)]

**Sent:** Wednesday, February 22, 2006 3:34 PM

**To:** Laurie Alexander

**Subject:** RE: HSU Senior Project

Hello Laurie,


First thank you for getting back to us so quickly. I understand your situation and my partner and I discussed this very issue when we were thinking about solutions to the problem of nutrition in schools. A solution we came up with was using planter boxes that can be moved around so that we didn't have to actually "break ground" on a campus. We have a few other ideas to get around the whole construction issue so if you really are interested in our project we would love to come in and talk with you.

thank you

Nikki and Mikayla

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From : Kim Cobine <cobinek@eurekacityschools.org>  
Sent : Monday, February 27, 2006 10:18 AM  
To : <nicole\_hugh@hotmail.com>  
Subject : response to senior project

 Inbox

Please give me a call @ 441-2487, we have a green house and 6<sup>th</sup> grade health class that might work well. Kim Cobine, Principal Winship Middle School, Eureka



Thanks for your reply, Nicole. I think it would be best if both you and Makayla could be here when we meet. How about Monday the 13th (oops..hope you are not superstitious about the 13th!) If you get this message soon enough, I would even be happy to see you today. The best time for me is 4 p.m. Does that work for you? I am excited to get this show on the road.

Karen Rudin  
441-2509

-----Original Message-----

**From:** Nikki hugh [mailto:nicole\_hugh@hotmail.com]  
**Sent:** Monday, March 06, 2006 2:48 PM  
**To:** Karen Rudin  
**Subject:** RE: Senior Project

Hi Karen,

I just called your office and Branna says that you won't be in until wednesday. We would love to work with your after school program. Is there any way we can come meet with you and ask questions/figure out goals and objectives? Makayla and I are both available M&W after 2 pm and Friday I am free after 2pm.

Hope to talk to you soon,

Nicole

---

From: "Karen Rudin" <rudink@eurekacityschools.org>

To: <nicole\_hugh@hotmail.com>

Subject: *Senior Project*

Date: *Wed, 1 Mar 2006 12:13:51 -0800*

>Nicole and Mikayla,

>I would love to have you work with the after school program at Lafayette for your senior project. If you wish to pursue this further, call me at 441-2509 or email me. My work hours are noon-6:00 p.m.

>Hope to get a response soon!

>Karen Rudin

>After School Coordinator

Actually, that means you would not get here til 5:30 probably..not good for me. If she gets out early any day, that would work. I would need to have you here by 5. Or you could come alone, Nikki and we can get started that way. I will not be in next Tuesday.

Thanks for staying in touch

Karen

-----Original Message-----

**From:** Nikki hugh [mailto:nicole\_hugh@hotmail.com]

**Sent:** Thursday, March 09, 2006 6:29 PM

**To:** Karen Rudin

**Subject:** RE: Senior Project

Awesome .. but one little problem ... Next week is spring break for HSU and Makayla is taking a grant writing class from 8-5 everyday. If you'll be around after 5 we would definatly be up for meeting with you. Would after 5 on the 13th be ok? (or any other day that week after 5)

Nikki

707 293 3698

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From: "Karen Rudin" <rudink@eurekacityschools.org>

To: "Nikki hugh" <nicole\_hugh@hotmail.com>

Subject: RE: Senior Project

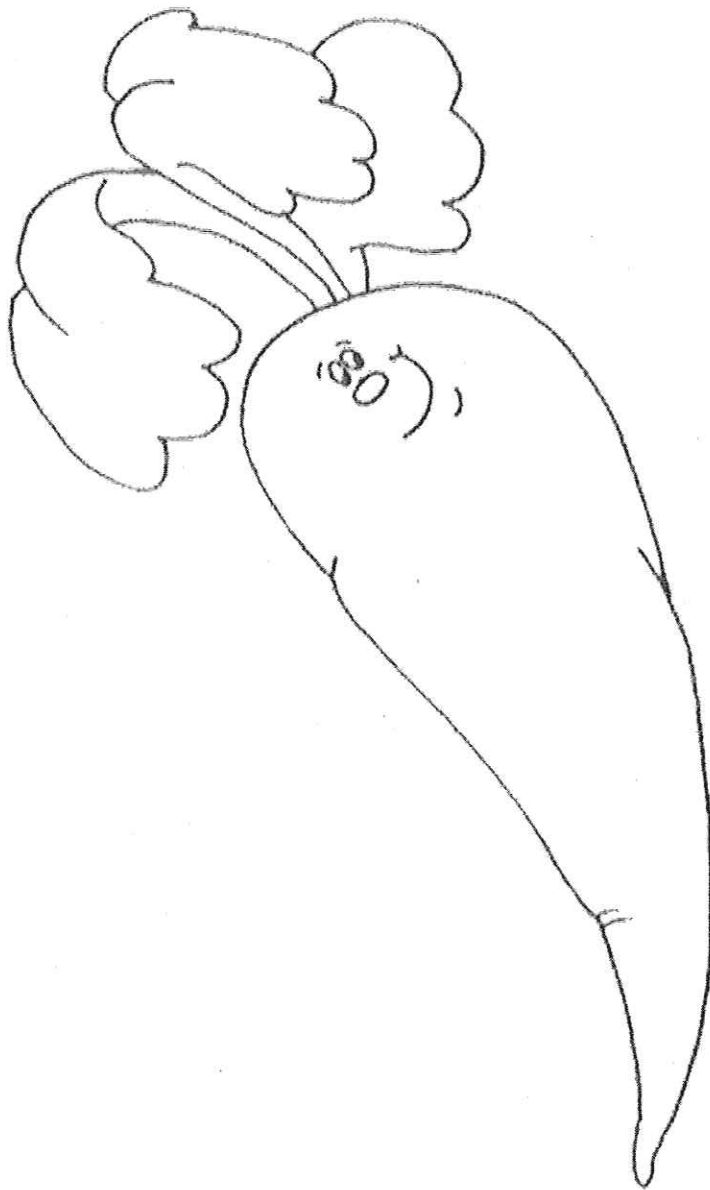
Date: Wed, 8 Mar 2006 12:14:33 -0800

Thanks for your reply, Nicole. I think it would be best if both you and Makayla could be here when we meet. How about Monday the 13th (oops..hope you are not superstitious about the 13th!) If you get this message soon enough, I would evenbe happy to see you today. The best time for me is 4 p.m. Does that work for you? I am excited to get this show on the road.

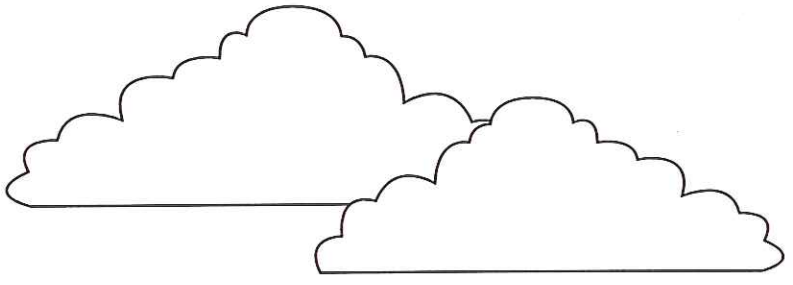
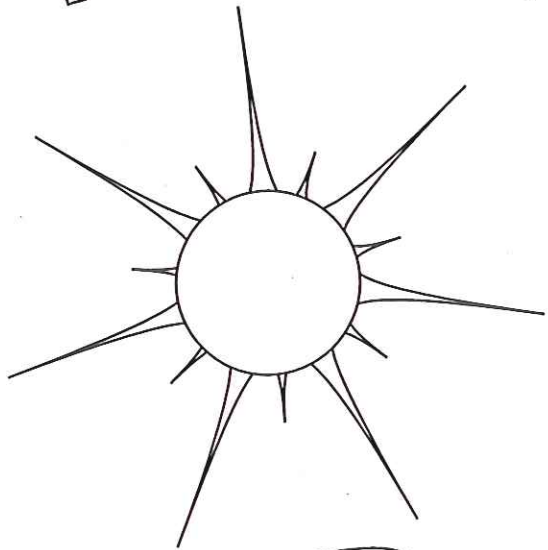
Karen Rudin

441-2509

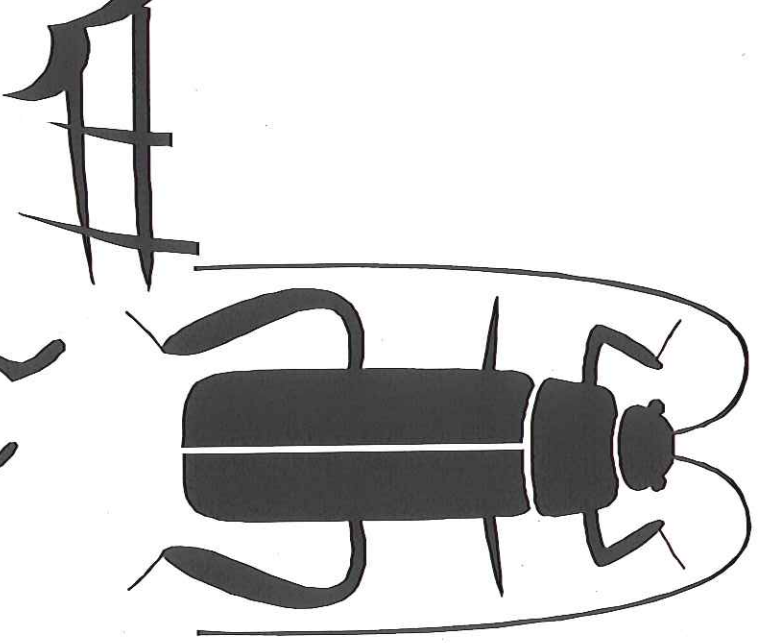
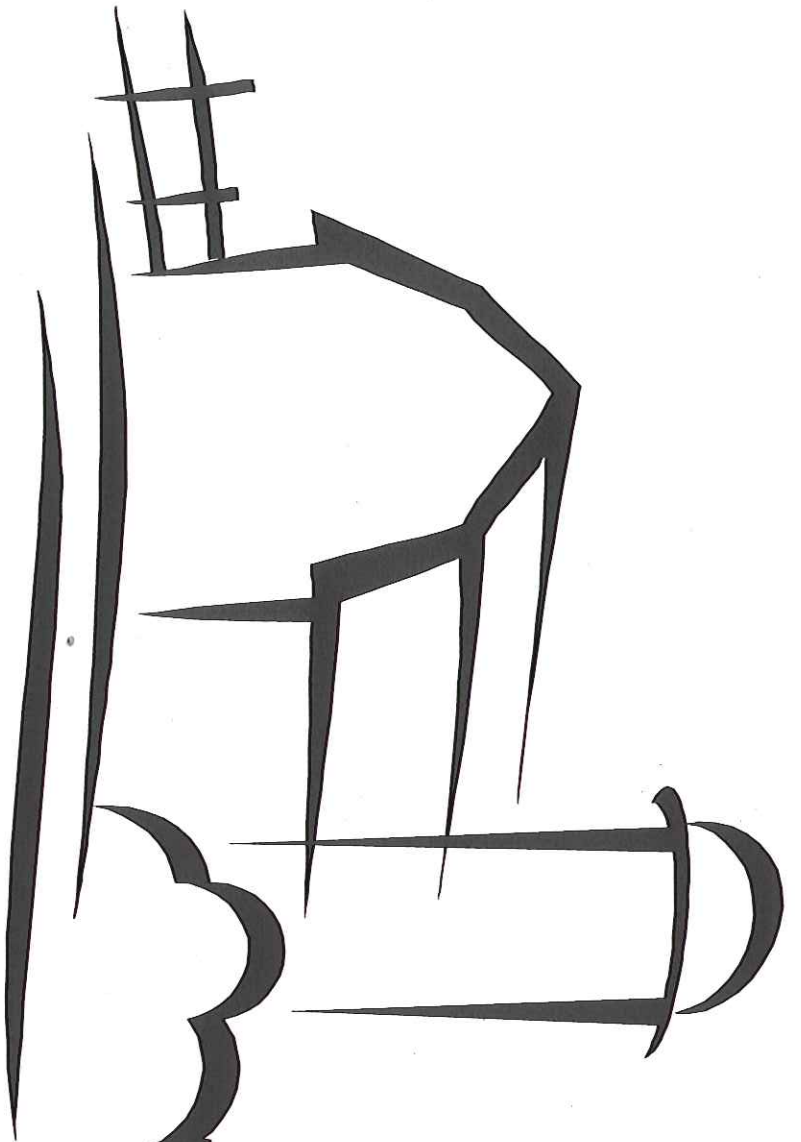
# My Organic Activities



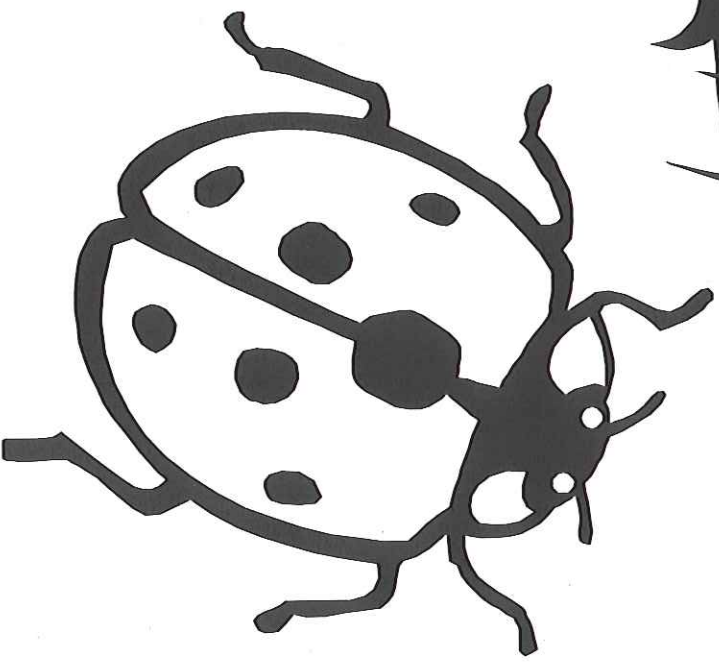
EATING ORGANIC IS GOOD FOR YOU AND THE EARTH.

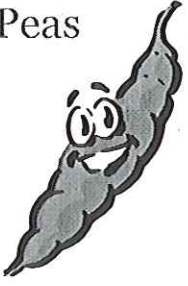

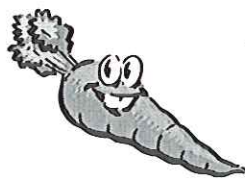






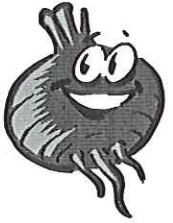

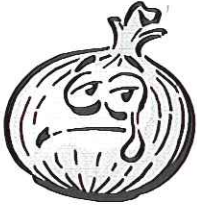
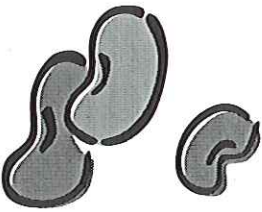
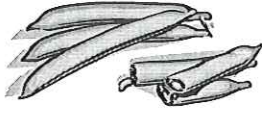

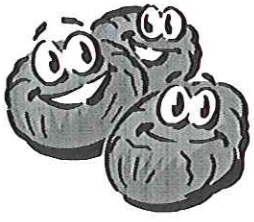

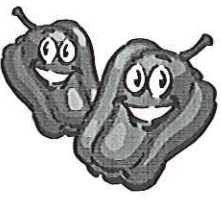
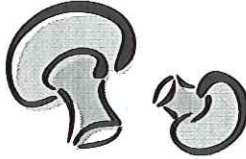


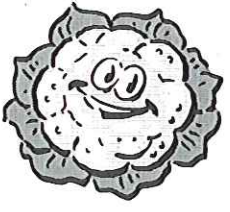







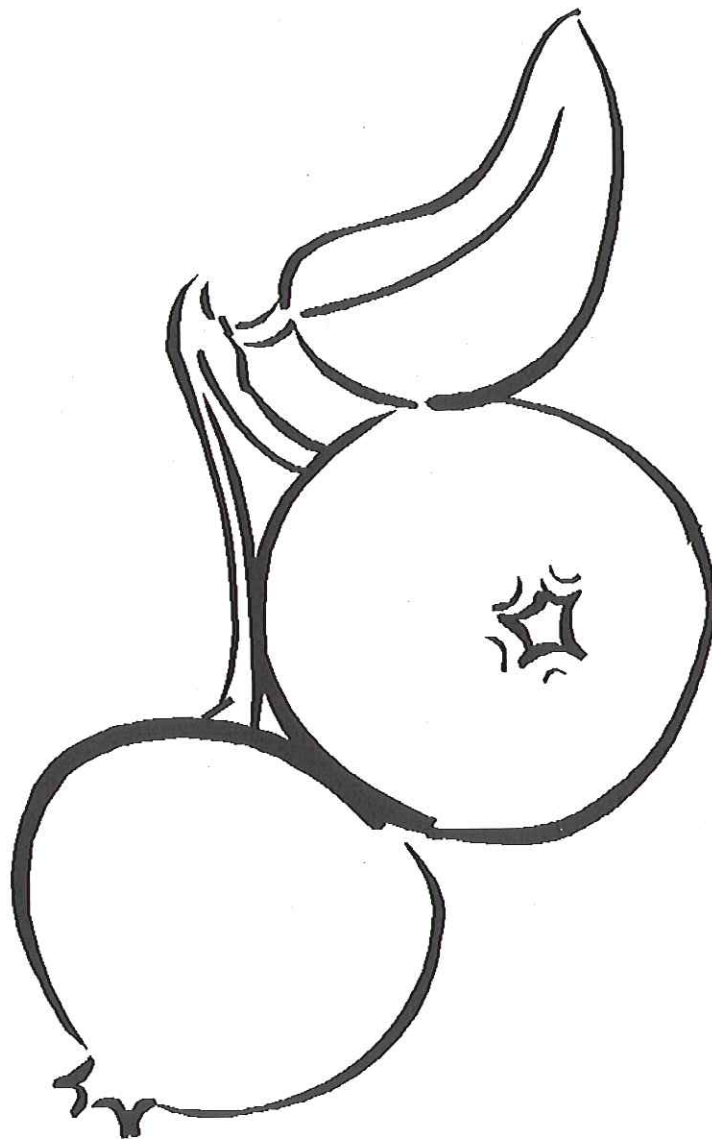


Some farmers use beneficial insects such as ladybugs and fireflies to control pests



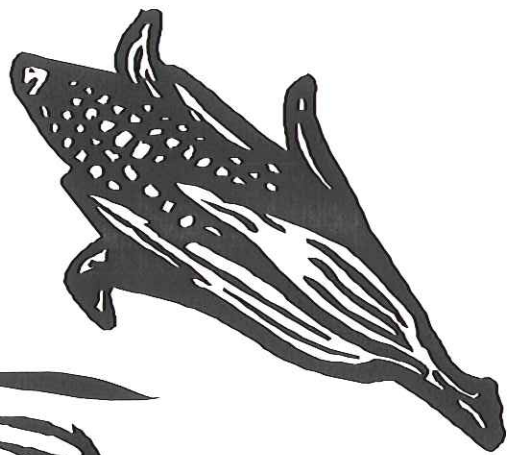
Peas 	Corn 	Carrots 	Lettuce 	Squash 
Eggplant 	Zucchini 	Bok Choy 	Artichoke Heart 	Beets 
Radishes 	Onions 	Kidney Beans 	Green Beans 	Potatoes 
Brussel Sprouts 	Tomato 	Bell Peppers 	Mushroom 	Cucumber 
Broccoli 	Cauliflower 	Turnip 	Celery 	Asparagus 

# My Local Day Activity Book



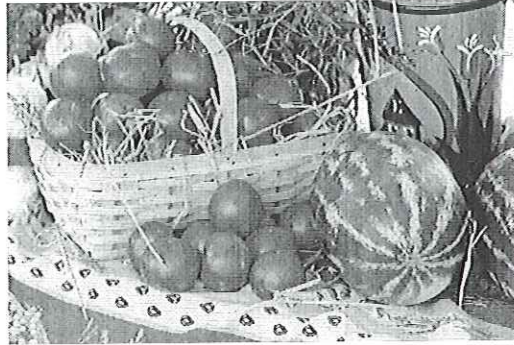


Farmers markets are great places  
to go and meet the farmers who  
grow your food





## ***Humboldt County Farmer's Markets at a Glance***



### **ARCATA**

- Arcata Plaza, April-November, Saturdays, 9 a.m.-1 p.m., 441-9999.
- Wildberries, June-October, 13th St. between G & H streets, Tuesdays, 3-6 p.m., 441-9999.

### **EUREKA**

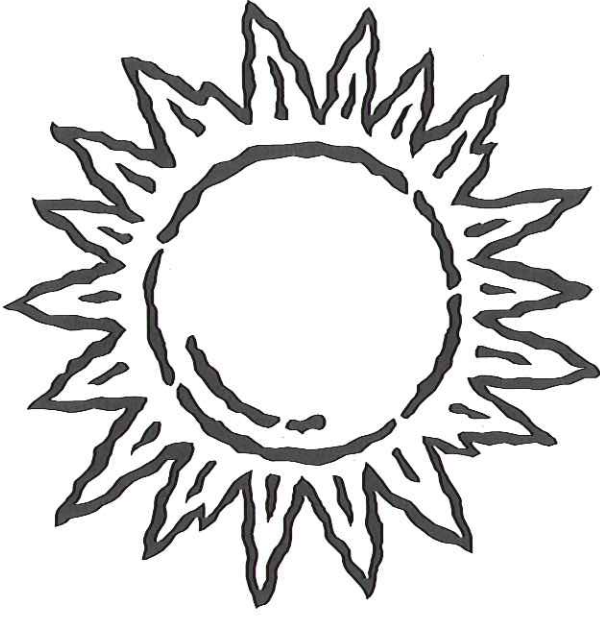
- Old Town Gazebo, June-October, Tuesdays, 10 a.m.-1 p.m., 441-9999.
- Henderson Center, June-October, Thursdays, 10 a.m.-1 p.m., 441-9999.

### **FORTUNA**

- 10th & Main, May-October, Tuesdays, 3:30-6 p.m., 786-4835.

### **ORLEANS**

- Orleans Market, June-October, Wednesdays, 10 a.m.-2 p.m., 530-627-3454.



Some farmers run U-  
Pick operations where  
you can go and gather  
your own apples,  
peaches or other fruit



# Farms where you can pick your own blueberries

Business Name: **LOST COAST BLUEBERRIES**  
Contact: Jeanne M. Mattole  
Address: PO Box 137  
City: Honeydew  
State: CA  
Zip: 95545  
Phone: 707-629-3563  
Sales Method: UP  
Products: Blueberries

---

Business Name: **WOLFSEN FARMS**  
Contact: Herbert & Elaine Wolfesen, Jr.  
Address: 2103 Baird Rd.  
City: Mckinleyville  
State: CA  
Zip: 95521  
Phone: 707-839-2017  
Fax: 707-839-2015  
Email: [ewwolfesen@cox.net](mailto:ewwolfesen@cox.net)  
Products: Blueberries





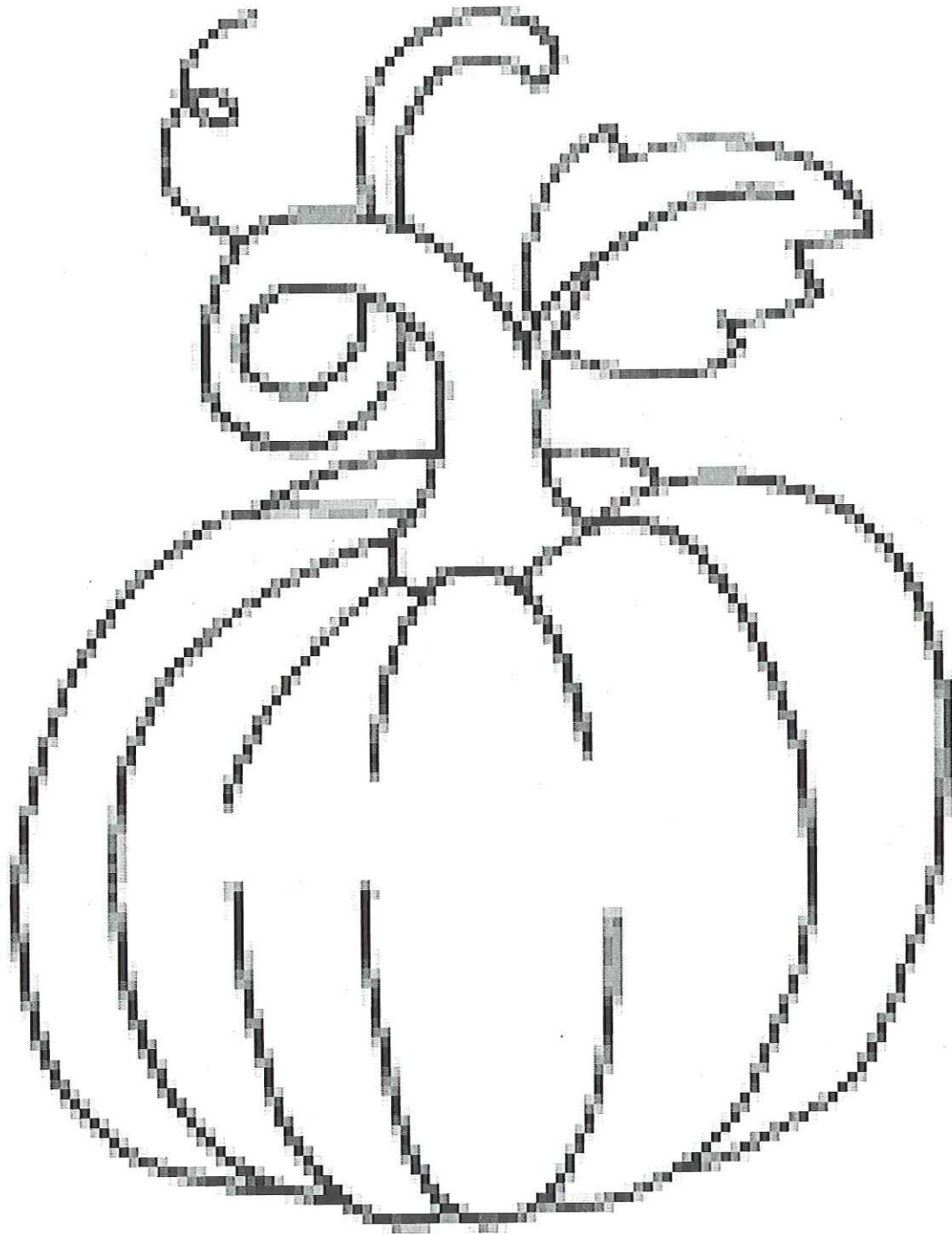


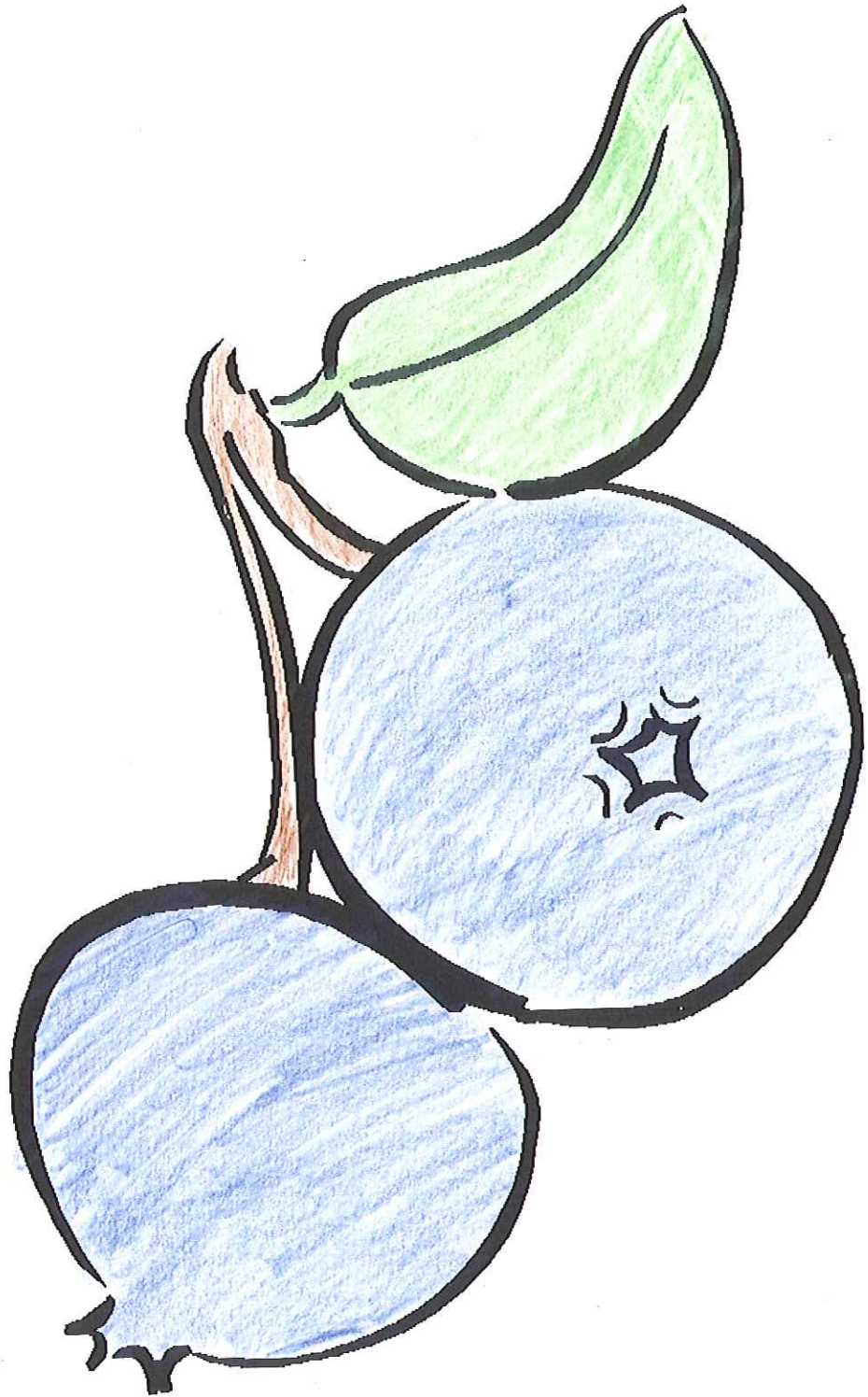


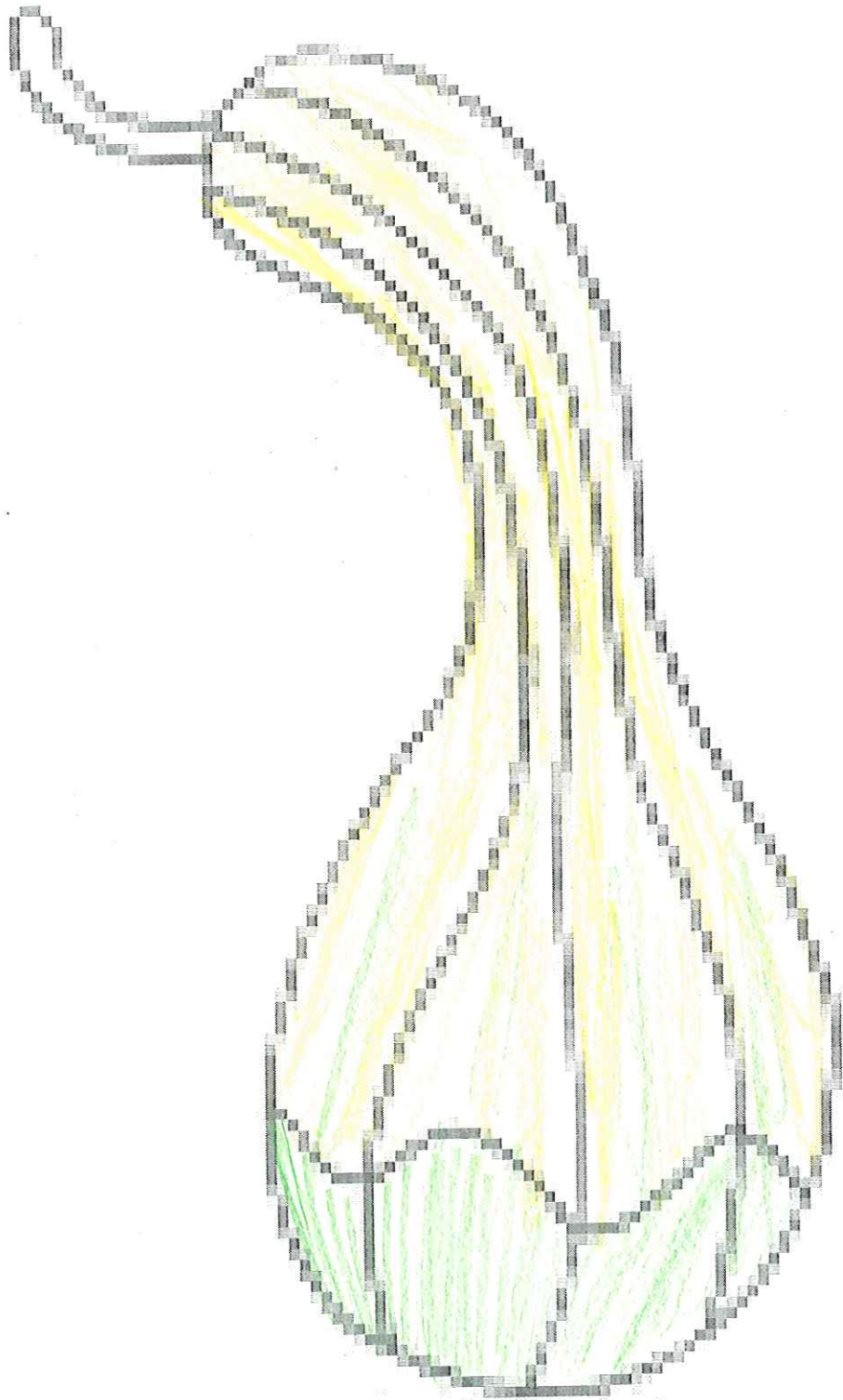


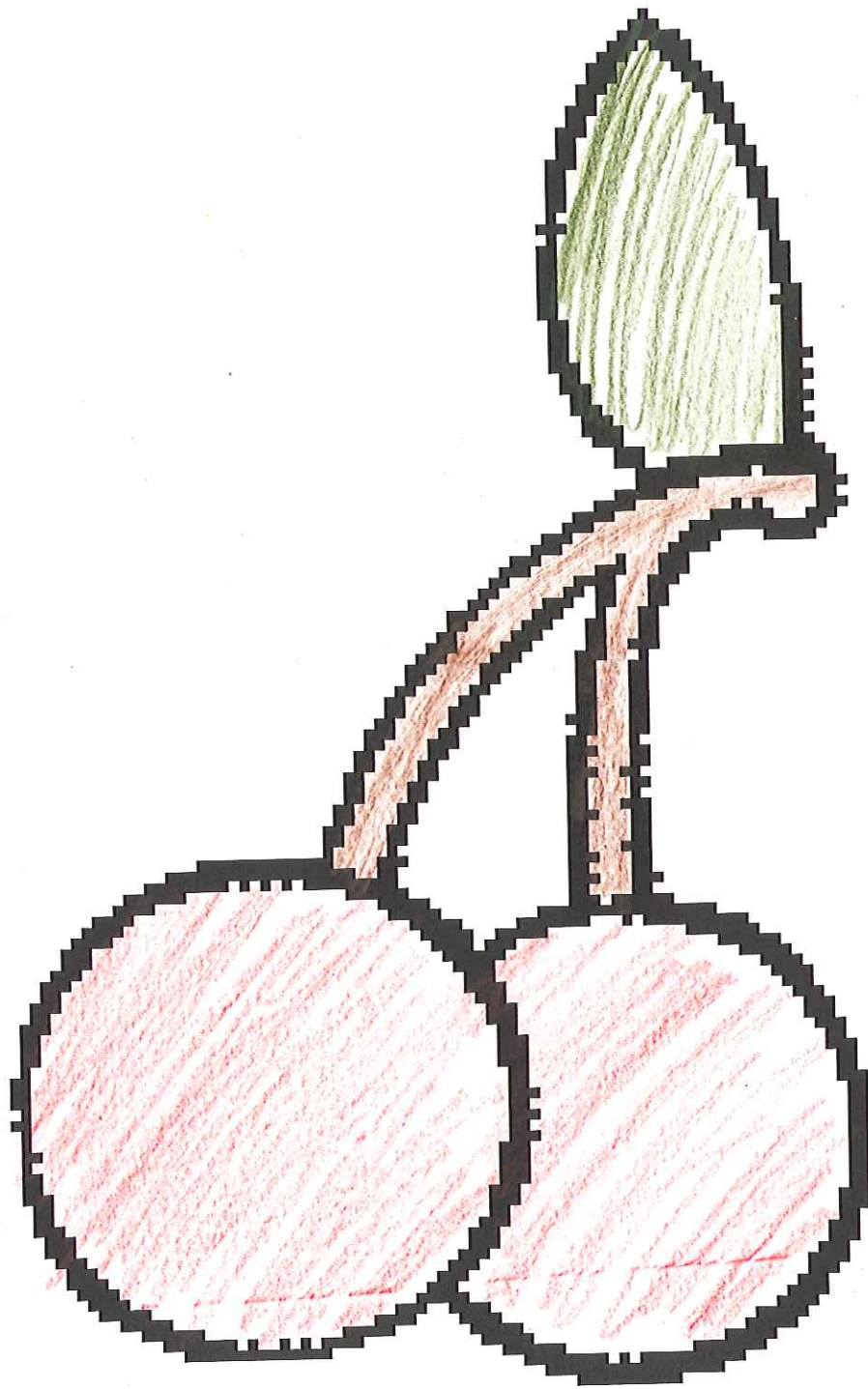




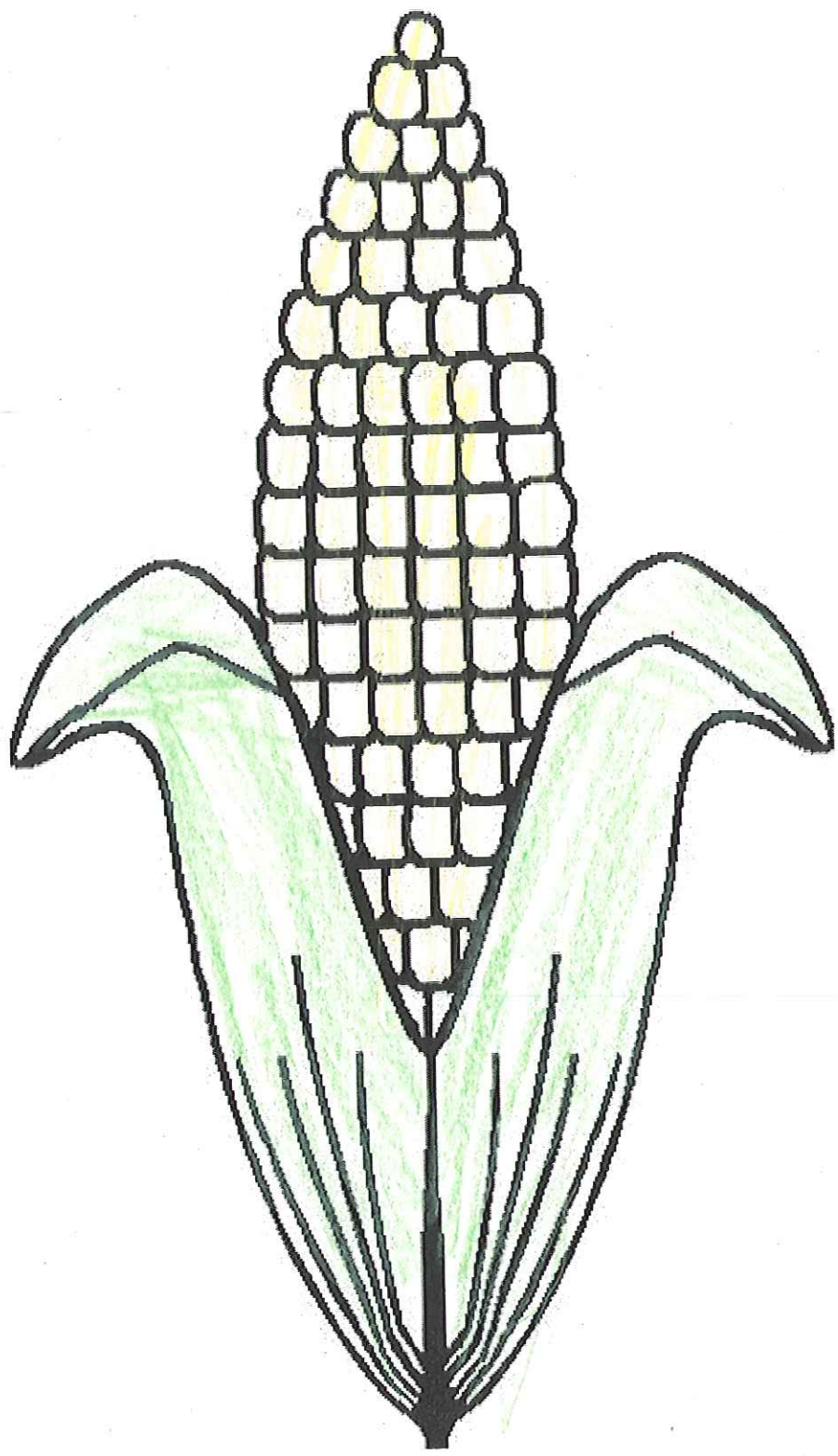


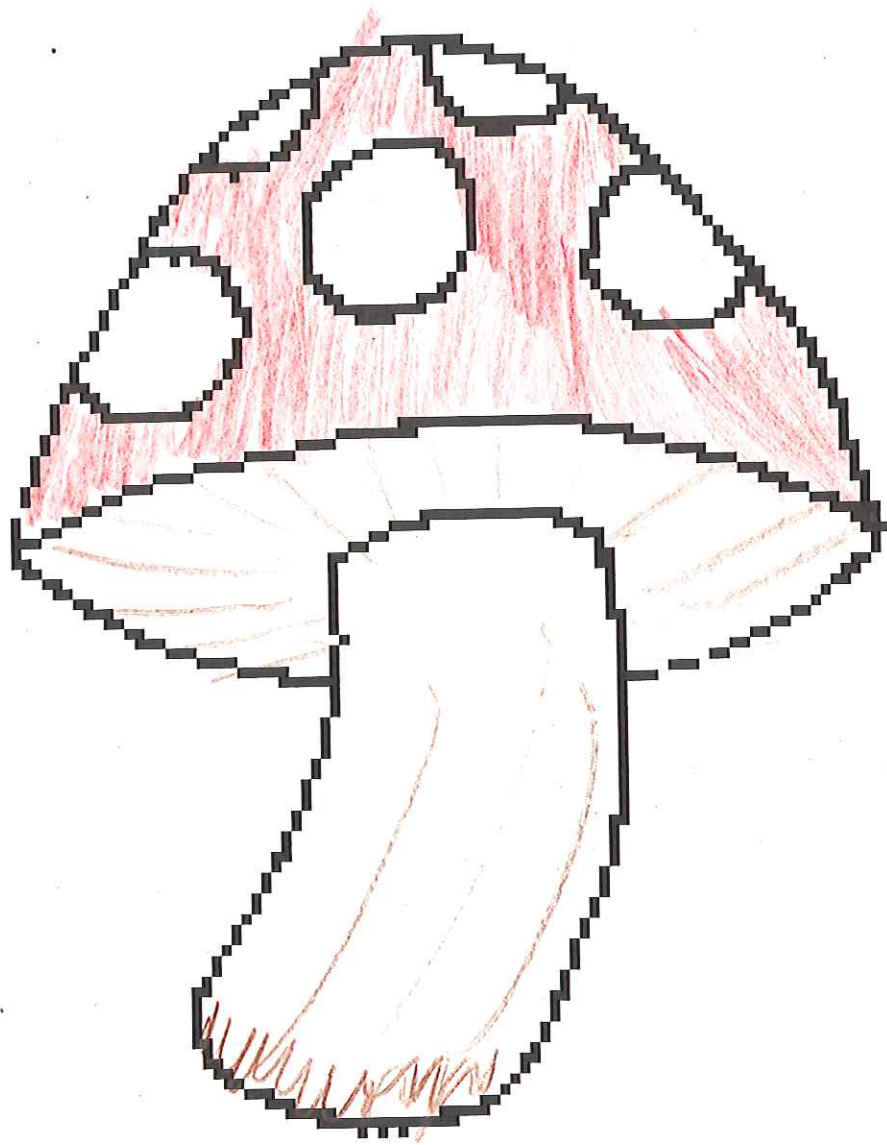


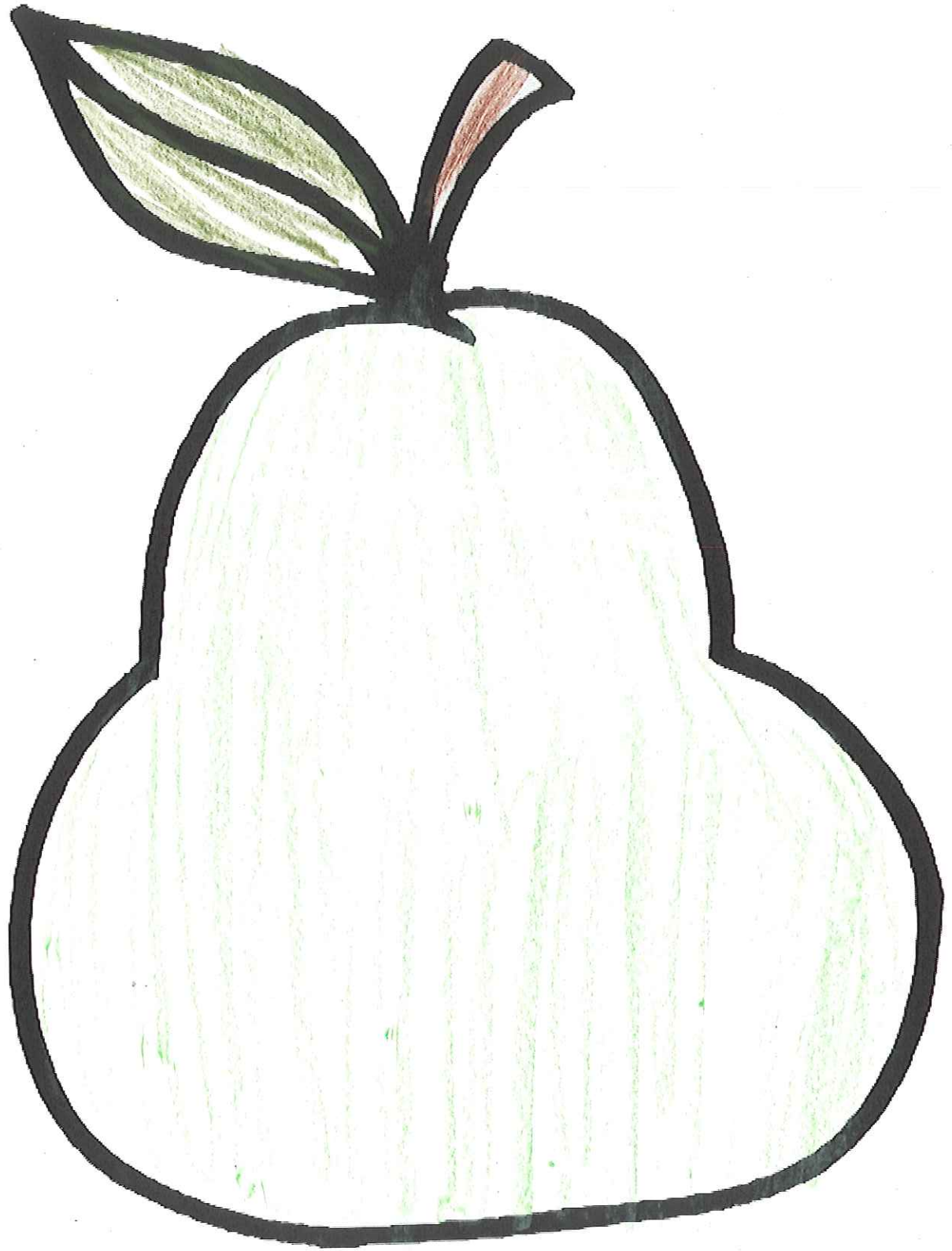


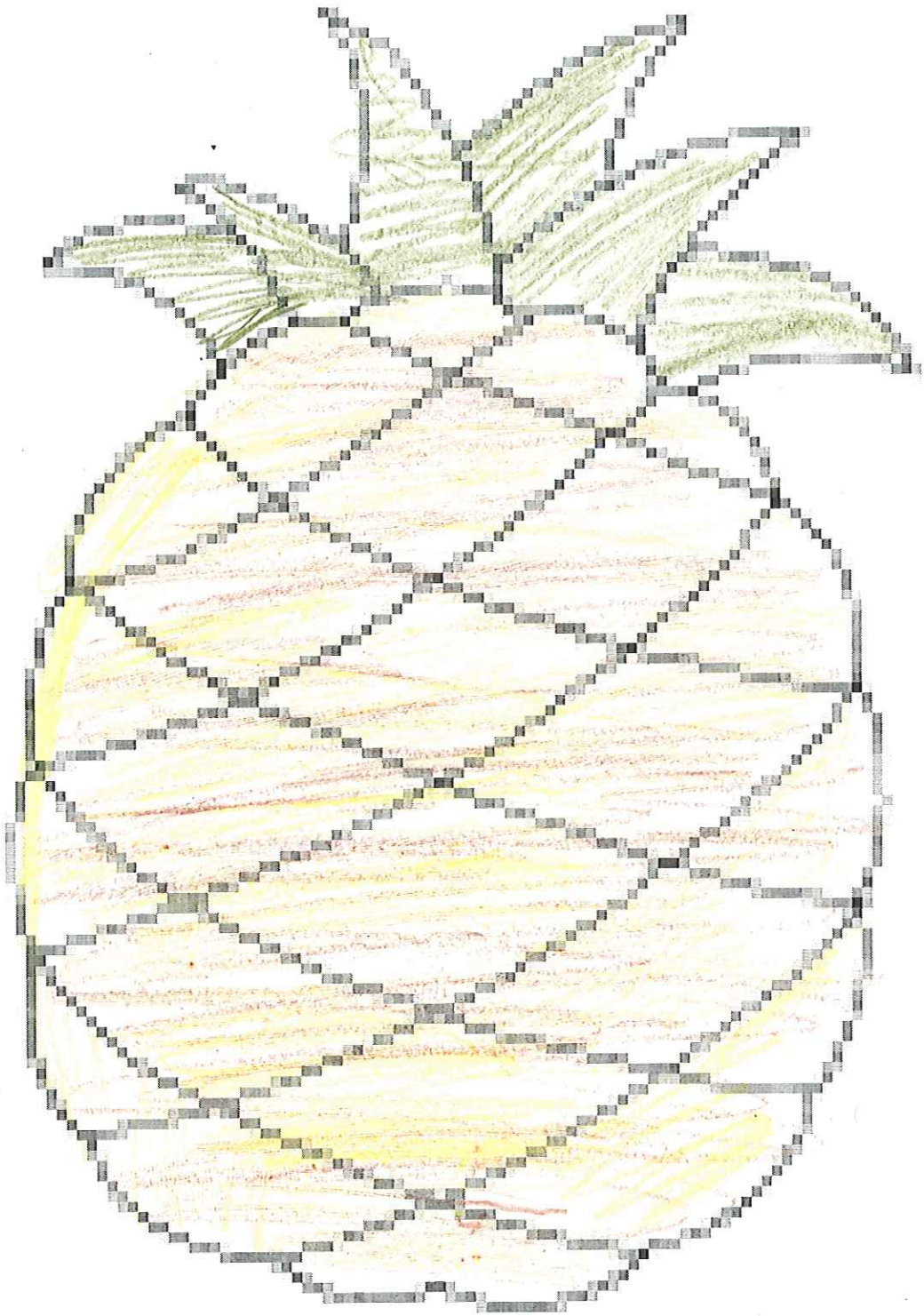




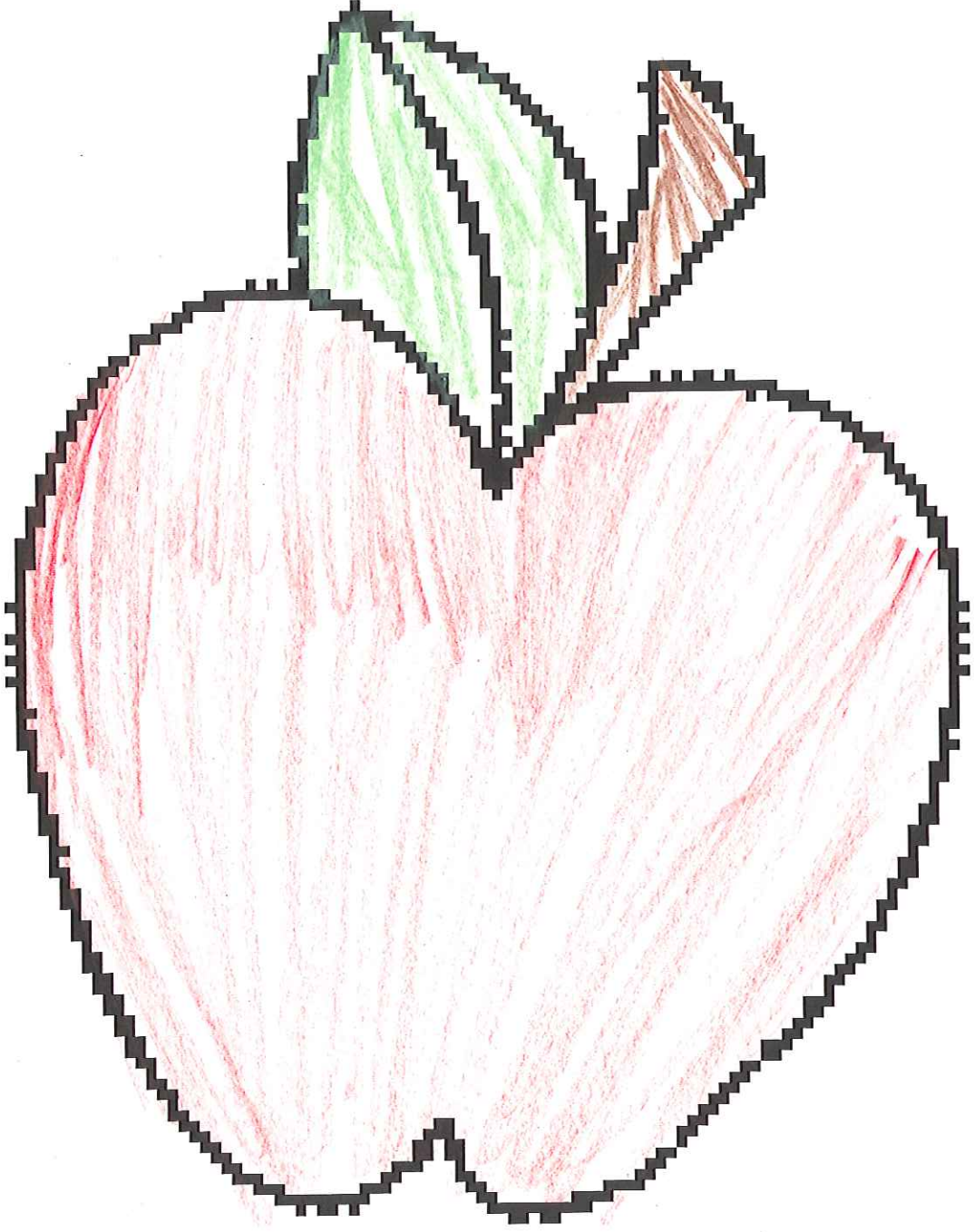




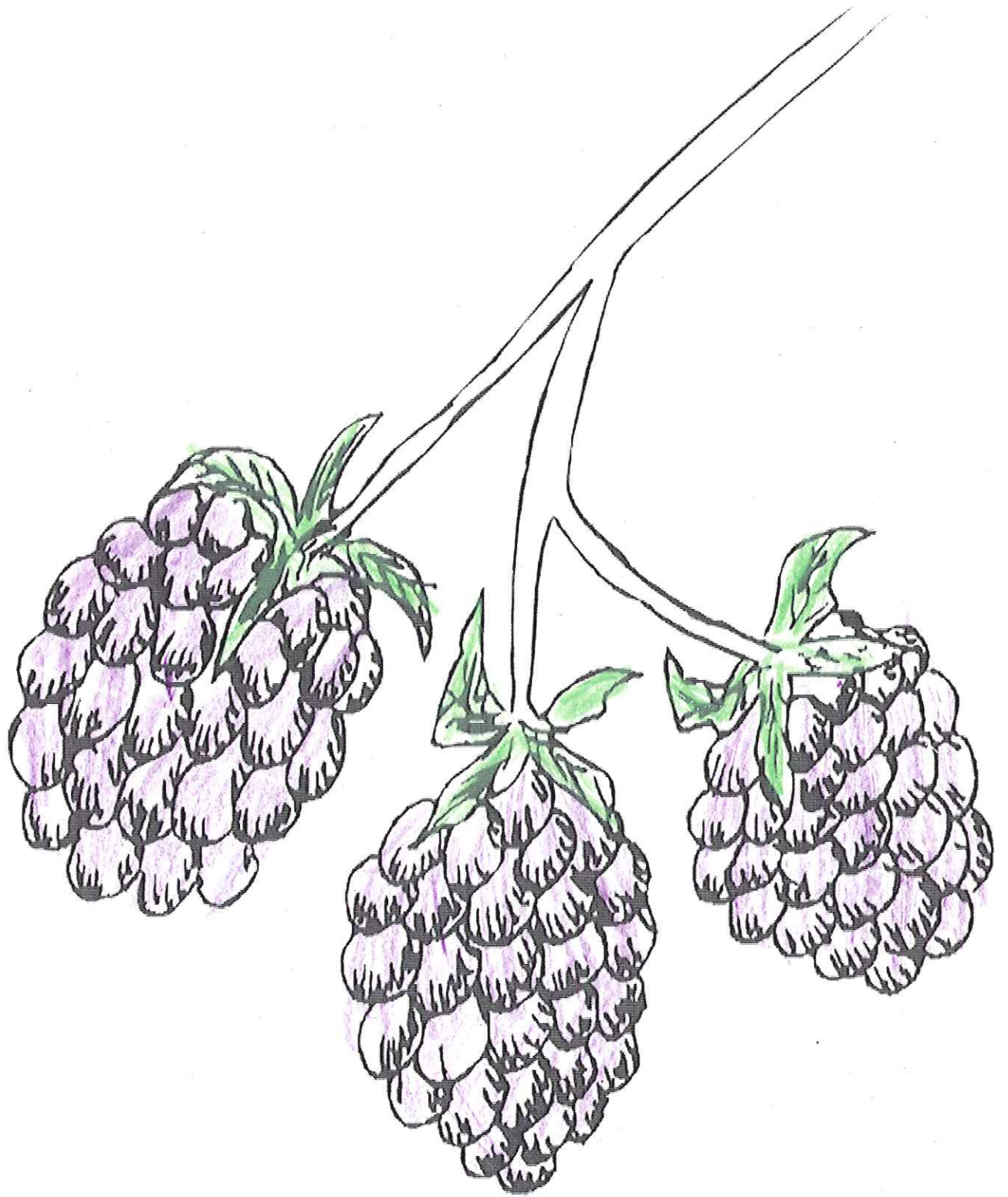














Lafayette After School Program Intervention Evaluation

Implementers: Nicole Hugh and Mikayla Zumwalt

Evaluator: Gloria Robinson

Dates of implementation: Organic Day: April 11, 2006  
Local Day: April 26, 2006

1. What was your overall impression of the implementers?

I thought the girls seemed very knowledgeable about their subjects. They were friendly and easy to work with also.

2. How well did the implementers interact with the children in the After School Program?

They were awesome! They came full of energy and ready to work. They were great at answering the kids questions in ways they could understand.

3. Were the Organic Day games/lessons created by the implementers successful in explaining the meaning of the term "organic"?

They did a great job of explaining 'organic'. They used an example of a apple tree in your back yard that makes apples without any help, compared to orchards that use sprays.

4. Were the Organic Day games/lessons created by the implementers successful in explaining why some people prefer to eat organically grown foods?

They tried to explain that some eat it because it tastes better and because its



Lafayette After School Program Intervention Evaluation

Implementers: Nicole Hugh and Mikayla Zumwalt

Evaluator: Karen Rubin - Coordinator

Dates of implementation: Organic Day: April 11, 2006  
Local Day: April 26, 2006

1. What was your overall impression of the implementers?

I liked their connection with the students.  
They were enthusiastic.  
They were eager to share their information

2. How well did the implementers interact with the children in the After School Program?

Very well. I was impressed with the  
immediate rapport they developed.

3. Were the Organic Day games/lessons created by the implementers successful in

explaining the meaning of the term "organic"?

I believe so. I was not in close  
contact, as I was managing the entire  
program.

4. Were the Organic Day games/lessons created by the implementers successful in

explaining why some people prefer to eat organically grown foods?

— or not. Students didn't necessarily like  
the organic samples. However, they were understanding

of why some choose foods organically grown.

5. Were the Local Day games/lessons created by the implementers successful in explaining what types of foods are grown in Humboldt County and why others don't?

Again, I was not focused on this particular lesson, so cannot comment.

6. Were the Local Day games/lessons created by the implementers successful in showing the biological makeup of different terrains? (i.e. frogs in the marshy areas and mushrooms in wood chips)

Definitely, as they took students to various areas of our campus to experience the terrain.

7. Would you use any of the games/lessons in future after school days?

The scavenger hunt was a hit. Students learned and had great fun too!

### Works Cited

- Barnett, Jyl. Farm-to-school in Humboldt County : opportunities for economic growth for small farmers and strategies for change in public schools. Humboldt State University Masters Thesis, 2005.
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