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Nutrition: It's in Your hands

Curriculum Unit 97.07.09
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The purpose of this unit is to put personal health and nutrition on the forefront of the minds of the children. Steps will be taken that can be repeated and shared by the students long after this unit is completed. It is hoped that the children will, by word and example, educate their families and community, by letting them know that they control the causes that affect their environment. This is the result I expect.

The areas on or near the surface of the planet, where plants and animals and humans can survive is the biosphere. In the country where we live, the United States, that area is under attack. A major environmental issue in the 21st century will be the pollution and contaminants that affect our land, air, water and food.

A call for stricter standards and reducing pesticide use and other contaminants is a must. We must move toward cleaner food. Effective testing of pesticides/food combinations is quite difficult. Just which pesticides have been used on which crops is hard to know. Until the laws get stiffer on the labeling and restricting of all pesticides used on or around the food we eat, the water we drink, and areas where our children frequent, we should move closer towards growing our own produce. We can also control what chemicals we put on our lawns or least research the chemicals used on the lawns where our children play if we are not the home owner.

Man has always sought to make like easier for himself with apparent little concern for how other living things would be affected. Children should learn ecology and the environment so that they can live in harmony with the rest of the world. The standard of living should be better.

"Ecosystem" is the term for all living and non-living things in a given area and the relationship among them. In any ecosystem the most important relationships involve the movement of food and energy, starting with the sun and involving the other main parts of the ecosystem. Many ecosystems may appear to be stable because the day-by-day changes are subtle. This apparent stability among plants and animals has been referred to as the balance of nature. In reality material, energy, and nutrients are in

constant flux.

My fourth grade class will begin this study by looking at connections. In almost everything that they do, see, or experience my students think of them as isolated incidents. The water could run in the sink while they brush their teeth for five to eight minutes. They aren't concerned. They don't pay the rent as it goes up or the water bill for homeowners. The entire paper and plastic contents that are left from a bag lunch could end up

on the school yard or a person's backyard. The child is not concerned. They don't pay the extra tax dollars for public works to send extra men to clean it. They don't realize they have less respect for where they live because it is unattractive, marred by the trash they and others have decorated the lawns and sidewalks with. The school 100 yard dash champion could decide to set a new track record on his or her way to the main office and trip over the broom of an unsuspecting custodian entering the hall. Never mind startling the custodian half out of his or her mind, the child has now suffered a broken ankle and can't compete for the rest -of the season. They often fail to see the cause and effect and most important, that they can to a measurable degree, control the cause.

Contaminants move through ecosystems. They affect our air, our water, our land and most seriously, our food. Sometimes the damage may not be immediately apparent, as it accumulates over long periods of time. One example of this is the exposure to UV radiation from the sun. Nevertheless, it is damage and we experience a lower standard of living because of it.

* LAND and AIR POLLUTANTS

Some pollutants are called criteria air pollutants. These include ozone, particulate matter, carbon monoxide, sulfur dioxide, lead, nitrogen dioxide.

Other pollutants are called hazardous air pollutants. They include asbestos, radio nuclides, beryllium, mercury, vinyl chloride, arsenic, benzene and oven emissions. Other common air pollutants are chlorinated hydrocarbons, organic phosphates, fluorides, and hydrochlorofluorocarbons. Some act together, for example, in car exhausts. Reason have been given for the necessity of each but their effect on the ecosystem proves different.

Acid rain forms when compounds in the air react with the water to form acids that then rain down on the whole environment.

Insecticides and herbicides are sprayed and leave poison on living things particularly near water. This happens to spread through the food chain. For example, a small fish may eat some green plant sprayed with a poison. The fish, in turn, is eaten by a larger fish which gets caught by a fisherman and sold to the local supermarket. Of course, it is then purchased by you, prepared, then eaten. You may get a little sick from just one fish, but over a period of time and eating more fish the poisons build up in your system and eventually you die. All kinds of reasons may be given for your death but the connection between the poison spray on the plant life and you eating that fish probably won't be one of the reasons. A good example of this is the mercury in fish-a little is unnoticeable but it accumulates over time.

The children who play in or near the area where the toxins were sprayed are at risk of getting sick just by inhaling and coming in physical contact with the chemicals. They live closer to the ground allows for greater exposure and possible damage to be done to them.

Now that we have established what our purpose and objectives are for the unit let's look at....

LESSON #I-The Ecosystem & Contaminants

Main Idea: Everything we do affects someone or something.

	LET'S DO POSITIVE AND BENEFICIAL THINGS.
Objective:	Define Ecosystem. Compare a food chain with contaminants to a food chain without contaminants. Develop food chain posters.
Time:	three (3) days 30 minutes each day
Materials:	Dictionary/encyclopedia, paper pencil, books on birds, books on plants, markers, nature magazines, poster board paper, two (2) small plants, water, alcohol.
Procedures:	Teacher will post a chart on the board of a generalized cycle of materials in an ecosystem. An explanation will be given. 1. In groups of three, all students will research ecosystems. 2. Two of the groups will research one type of small fish and a larger fish that eats him. 3. Two groups will research plants that are eaten by fish. 4. One group will care for one plant with sunlight and water. 5. One group will care the other plant with sunlight and alcohol.6. The plant caretakers will water or alcohol their plants everyday for three days and record any changes observed on a daily basis. 7. All groups will make a food chain poster using pictures from the magazines, or those drawn by hand. Humans do not have to be at the top of their food chains. 8. By day three, each group will present an oral report of what they found. 9. The class will decide which of the two plants they would want to feed the fish they would eat and why. What happened to the plant not chosen.
Conclusion:	1. What would eventually happen to any living creature who is at the top of a food chain where poisons have been consumed along the way? (Answer-it depends on the poison-some are passed along-others are not. Metals accumulate - hydrocarbons accumulate - organophosphates do not). 2. How do contaminants move through an ecosystem?

* WATER POLLUTANTS and the importance of water

The United States needs to take special care of its water supply. It is so hard to find pure drinking water. We have to create acceptable drinking water by filtration or by treating polluted water with chemicals. Companies dump toxic wastes into waterways which affect public drinking water and may cause fatal diseases. Individuals who care little about others and the environment may put human wastes, dirty drug paraphernalia, and trash in waterways that affect or drinking water.

We can help prevent some pollution by choosing detergents that are low in phosphates as well as other cleaning agents. We can also use more advanced waste treatment methods to remove a high percentage of phosphates from effluents of sewage treatment and industrial plants before they reach a lake. Farmers can be required to plant buffer areas of trees or other vegetation between their fields and nearby lakes or other surface waters. Much aquatic life has been disrupted and destroyed because of the lack of attention given to this matter. Phosphates are nutrients that can cause rapid aquatic weed growth, demanding oxygen and choking fish.

Much of the water withdrawn in our country is for cooling electrical power plants. Water is withdrawn from nearby surface water, passed through the plant, then the heated water is returned to the same body of water. This is the cheapest and easiest way to cool turbines and other moving machine parts. This drastic temperature change kills much of the aquatic life, animals and plants. This is referred to as thermal pollution. We all can affect change here by using and wasting less electricity, returning the heating water to a point farthest from the vulnerable shore zone, and limiting the number of power plants discharging heated water into the same location.

The lake ecosystem can be covered in greater depth at some other time but I want to focus more on our drinking water.

Contrary to popular belief, not just any kind of drink or fluid can produce the preventive and/or medicinal effects on the human body that water—pure water—does! The body can't resupply the water loss through sweating, crying, urinating, spitting, etc., on its own. We have to drink it, six to eight cups a day minimum. Good clean water will aid in flushing out the system and is great for the kidneys. When wastes remain in the body for a long period of time decay, illness, disease and death can result.

Because of the lack of importance put on water, clean water and its frequent consumption, the effects on our society have been dehydration, headaches, some back pains , congestion, constipation, skin irritations like eczema, and colon cancer. Our bodies are screaming for water. Are you listening?

Now that we have established our great need of clean water let's look at some ways of identifying water that may be unfit to drink. Let's do some tests...

LESSON #2-Water: Good or Bad

Main Idea:	To recognize water that may not be suitable to drink.
Objective:	Identify water that may need to be tested.
	Compare poisoned water to diluted poisoned water
Time:	30 minutes
Materials	strawberry syrup, milk, water, paper, pencil, 5 cups (clear), two teaspoons garlic powder, 1 teaspoon of minced onions (dried)
Procedure:	1. Question will be asked-How can you tell that something may be wrong with the water? (wait for responses)
	2. Have one student fill one glass with water 3/4 full.
	3. Have another student add 2 drops of the strawberry syrup to it and stir.
	4. Have another student fill another glass with water 3/4 full.
	5. Have another student add two teaspoons of garlic powder to it and stir.
	6. Have another student fill another glass with water 3/4 full.
	7. Have another student add the minced onions to it. Place the three cups where all could observe.
	8. Question-What would you say was wrong if you received these three glasses of water? Signals they need testing.
	9. Have a student fill one glass (clean) with milk 3/4 full.
	10. Have another student add 2-3 drops of the strawberry syrup to that milk and stir.
	11. Have another student fill the last glass with milk.
	12. Have another student add about 20 drops to that glass and stir.
	13. Question- If the syrup was a poisonous substance which glass would you drink if you had to drink one? Would the diluted one be safer? Why or Why not? It's hard to know this because it would depend upon the toxicity of the contaminant.
Conclusion:	1. Would it be better to dilute water if the contaminants could not be removed?
	2. What are some of the signals you can look for in case of possible water pollution?

The purpose here is to rely on the senses-taste, smell, appearance. Yet what about invisible poisons? If one drop per glass were poisonous—but invisible how would we know? We need to rely on government testing.

* NUTRITIOUS DIET: It’s in Your hands

The importance of a well-balanced nutritious diet cannot be overemphasized. On the previous pages we discussed problems that affect our air, land, water plants, and animals. Once we have gone past that still are faced with making intelligent decisions about the food we can eat. Again we are investing in our future. Cultivating healthy diets will lead to healthy minds that will eventually make major decisions in this country.

The children in my class often complain about the quality of the school breakfasts and lunches. I suppose the school system is doing what they think is best given what they have to work with. But is it the best? High fat, high sugar, mostly white bleached, flour products with little fiber, but filing make up the meals served. A few relatively simple changes would make a world of difference. Whole wheat instead of refined white products is one change. A few more vegetarian based meals using beans and brown rice or eggplant parmesan may be a nice healthy change.

Home often affords even less nutritional guidance for some children. They go home after school where they have to fend for themselves. What’s easy, sweet or salty are the usual foods of choice for many children. Even though potato chips are made from potatoes they contain fatty oils and often too much salt. Substitutions that are agreeable even to children can be made inexpensively. High fats can be replaced with lower fats. Products with added sugars can be replaced with products with little or no added sugar. Foods made with refined white flour can be replaced by products made with whole wheat or other whole grains. Soft drinks including Kool-aid, Hi-C, Hawaiian Punch, and soda which contain much sugar, artificial flavors and colors can be replaced with 100% fruit juices or water.

The following are an example of just such substitutions.

High fat, sugar, salt, or oil	Lower or no fat, added sugar, salt
potato chips	plain popcorn
cheese twists	cheese chunks from skim milk
peanut brittle	low salted peanuts
hard candy	raisins
pretzel sticks	carrot or celery sticks
jellied candies	apple slices
(gummy bears,etc.)	(dipped in peanut butter)
soft drink	100% fruit juice

Now that we have established the alternatives to the junk food that is consumed let me emphasize that snacks have a place in young children’s diets. A place is marked out for each kind on the food pyramid. The good snacks would be listed under the under the fruits, vegetables, nuts, or grains. The not so good snacks would be listed under the fats, and oils. The food pyramid was developed to give people a sense of the levels of importance of foods in each respective food group. The bigger the chunk of the pyramid a food group occupies the more of that group we should consume on a daily basis. The smaller the chunk out the pyramid the less, if any of the items in that food group need to be consumed on a daily basis.

We will return to the food pyramid later in this unit but for now we will do a lesson on....

LESSON #3-Nutritious Snacks

Main Idea:	You can eat healthy snacks and maintain optimum health.
Objectives:	Identify items that can be healthy snacks at home. Predict which snacks have more nutritional value.
Time:	35 minutes
Materials:	box of raisins, bag of lollipops, butter knife, wholewheat bread, peanut butter, polaner's all fruit, list of nutritional value of snack foods, paper plates, carrot sticks, apple slices, potato chips, paper, pencil
Procedure:	1. Divide the class into three groups.
	2. Arrange the fruit slices and veggies on separate plates.
	3. Have all the students write down a list of all the different snacks they have when they go home from school.
	4. Each group will guess which foods they chose are more nutritious.
	5. Arrange the rest of the snacks on paper plates.
	6. For every snack each groups wrote down that is nutritious the entire group gets to choose a snack.
	7. Each child can spread p.butter on a slice of bread and make a happy face with raisins, apple slices,
Conclusion:	1. Why is it important to eat healthy snacks?
	2. Name 5 poor snacks and an alternative good snack.

* YOU GROW IT, YOU EAT IT

Having control over what we eat really takes on a new meaning when you grow your own garden with foods you actually intend to use as vital parts of a meal. Care must be taken to insure the best soil, nutrients, and water are used, as free as possible of pollutants and contaminants.

There are a few good natural insecticides, not toxic to humans, on the market today and you are considering doing this unit you should look into them. The Hamden Garden Center in Hamden, Connecticut is very helpful for all your gardening needs. There are purely organic insecticides like Rotenone/ Pyrethrum which comes in liquid and powder form, and chemical and organic mixes, too many to mention at this time. Of course, we still have the chemical brands. I suppose they will be there for a while because the owner of the shop expressed the fact that the organic mixtures cost so much more. Here again, we need to think of our overall long range health and that of our children over cost. Who says those chemical products are all that effective any way? It has been often said that for every pesticides man develops another strain of insect evolves that resists the previously used product.

I, personally, may not be advocating the use of this substance but I recently read an article which stated that cocaine, derived naturally on coca leaves was a great pesticide. Nicotine has been found to be good for the same reason. It is quite toxic to humans just as cocaine is.

Some things I do have in my home are bay leaves and they are said to repel bugs. Peppermint oil is said to repel ants. As long as you can smell the scent it is still effective.

There has also been a pesticide made from grapefruit cocktail. Can you imagine that ? Quenching your thirst,

beating the heat and the bugs at the same time. Now this is one project my students might enjoy putting together.

The final product, food, is the constant motivation. The students have to have a reasonable level of control over the outcome so how we treat the soil is pertinent.

Good soil will hold the water longer and keep your plant from drying out too quickly. You will know it is time to water the plants again when the soil on top is dry when touched. Clay soils hold water better than sandy soils. How about testing the soil? In the current issue of Organic Gardening magazine I have found a test for soil. You actually mail samples of your soil out to one of eight (8) professional soil labs nationwide and you get your results back in days. The is even a 1-800 number listed for garden advice. They test for 15 essential soil elements. They make organic amendment recommendations.

Mail a check or money order for $22.95 (No cash or COD's) to:

Green Gems, P. O. Box 6007

Healdsburg, CA. 95448-6007

or call 800- 431-SOIL

Plant foods can be brought at gardening store or made by you. If made by you, it should be made up only as you are about to use it. It loses much of its effectiveness if prepared in advance. The top soil should be mixed with a good compost or manure. Mix some of the nutrients in the top soil with the next layer of soil. Keep it all moist. Cover with some protective material straw or mesh.

Nature has its own way of taking care of plant life. Do you think dead plant and animal provide nutrients to the soil through human assistance? No, certainly not. It happens because of that balance of nature mentioned earlier in this unit. Grub and other underground creature aid in breaking down decaying matter making richer soil. This balance is maintained as long as no contaminants come in contact with it. Plant life near the water has excellent growing potential because dead fish have a high level of a much needed nutrient, nitrogen.

If the soil in the area raises question about its quality you don't need to use soil. That's right! You can have a garden without soil. Soil is not needed for a plant to grow.

There are five basic needs most plants have. Nutrients, light, air, water and heat are most needed and we will prove it with this next lesson plan.

LESSON # 4-Garden without Soil

Main Idea:	If contaminated soil is a problem don't use it. Plants can be grown without it and be eaten.
Objective:	Define the basic needs of plants. Compare plants grown from plants to plants grown from seeds.
Time:	4 days, 25 minutes each day
Materials:	Nutrients, light, air, water, heat, cups, jars, covers, cheesecloth, rubber bands, mature plants books on gardening without soil, a hammer and nail and newspaper.
Procedures:	The basic needs of a plant will be discussed and shown on the first day. 1. Day 2 Each child will be given their own jar 2. Half of the students will be given alfalfa seeds. The other half will be given cuttings from the mature plant.

3. Those with seeds will place the seeds in the jar, then rinse the seeds with cold water and pour off the water. Shake the seeds around in the jar until they all stick to the sides of the jar holes should be made in the lid with the hammer and nail. Cheesecloth should be placed over the top and secured with a rubber band, then covered over with the lid. the seeds must be rinsed everyday with the cloth still on. After about four days you should see much growth.

4. Those with the cuttings should place the cutting in water enough to cover the end, and remain covered with water until two inches of roots appear. Check it daily.

Conclusion: 1. Which grew faster roots?

2. Was soil necessary?

3. What are the basic needs of plants?

4. Can plants grown this way be eaten?

5. Were pesticides used?

African Americans have special needs in the area of nutrition. Through history the abundance of stress put on them, poor food fed to them during slavery, along with poor medical care have contributed greatly to the health risks they face. Continued racism and rage make it necessary for blacks to be in control of their diet. Young African Americans must be reminded of their responsibility to themselves and families in this area often.

All stimulants, coffee, tea, colas and chocolate need to be eliminated from the diet. Meditation may be a good way to relax and relieve stress. Exercise should be done on a regular basis. Walking is the exercise of choice and can be done with little or no injury by all ages.

Water plays a very important role in the health of stressed out African Americans. High blood pressure is higher among them than any other group. A clean moist system lessens the risk of strokes and heart attacks. Being overweight can bring on strokes but, again, water and moderate exercise can substantially reduce this problem.

Foods eaten in their raw state or as close to their natural state as possible give the maximum vitamin and minerals to the body for all people. Blacks often over cook their food for taste but the taste buds have been perverted for so long and don’t know what good food should taste like. Too much rich and spicy foods also have ill effects on the system.

What should be planted that would grow nicely under the proper conditions and be palatable and tasty? (Eggplant, collards, spinach, tomatoes, onions, potatoes, and peppermint.) These will be grown in soil. They should not be fried but baked, steamed, or boiled. Seasonings will have to be bought along with oil (olive) and honey for the peppermint tea.

To begin our meal garden we will grow our own transplants. This will save us money and guarantee healthier, disease free plants. There is a large variety of seeds available. This does take more time, trouble and planning. But the experiences will be memorable.

WHEN CHEMICAL PESTICIDES ARE USED: PRECAUTIONS

This unit is written to encourage the use and/or development of natural pesticides, but there are those who will read this lesson and may feel it is too much trouble to go through when the chemical products are so readily available and cheaper. Well, if you fall into this category I wish to give a little advice.

Chemical pesticides are not only harmful on our food or in the soil but its effects can be experienced before you intend to use the product. Pay close attention to where you store these items. Very high shelves or hidden cabinets may be good but locked storage places would be best. Hide the Key!

Because the mosquitoes are so plentiful in backyards this year, I have seen friends use some form of yardguard in their yards prior to their company's arrival. Which brings me to another point. Make sure your children, pets, and your childrens' toys are out of the way before you spray. The pesticide needs to dry before you allow people to come in contact with it. I had touched the arm to her patio chair which still had wet insecticide on it. It smelled funny and felt a little oily, so I immediately went to the bathroom and washed it off completely with warm soapy water. Lucky for me she had some antibacterial soap. I really can't say if that kind of soap made a great deal of difference, but I sure felt better.

When I was in the day care business I was shown a video on safety and a child in the video had mistaken a bottle of Pine-Sol for some apple juice. Of course, the child was quite young, perhaps between one years old and three years old, and the Pine-Sol was not locked up. But my point is you should never put your insecticide in any container that a child may mistaken for food.

If there is a case of accident ingestion on the part of a child or adult be sure to have the emergency poison hotline number on hand, preferably near the telephones. Nothing can ruin a classroom project, home picnic or party, trip or experiment like the lack of preparation and information. Plan well in advance which pesticides you will use. Read carefully, I repeat, READ CAREFULLY, the instructions on how any pesticide is to be used. Even good pesticides can be misused and cause damage to your crops. After all your homework has been done you should be ready for the next lesson.

LESSON # 5-Selecting and planting seeds

Main Idea:	There is a direct connection between what is in your garden and what gets put on your plate. It's in your hands.
Objectives:	Select which seeds to grow. Define vegetarian meal. Compare plants grown in soil to these without soil .
Time:	1 week initially, then 6 months
Materials:	seeds, plants, wood, soil, plant food, hammer & nails, cartons, water, book about gardening, camera, shovel, plates, knives and forks, newspaper
Procedure:	1. Students will decide what a vegetarian diet is.
	2. Student will make a balanced vegetarian meal.
	3. Seed and plant choices will be given for our garden meal.
	4. Soil and containers will be given to each student. They can chose any seed or plants they want. Of course we will only have seeds of things that can grow in the northeast, in our climate. Seeds will be planted on the first day and checked every day.
	5. Small plants will be transplanted to an area just outside our classroom window.. Rows will be neat and soil treated, prepared.

Water daily. Check for weeds and harmful bugs daily.

6. After each plant has reached maturity they will be picked/harvested and washed off then cut and prepared for cooking.Some of the cooking will be done in class. Some done at home.

7. Each child will take part in some aspect of the meal preparation or table setting. Meal will probably consist of eggplant, collards, tomatoes, onions, potatoes and peppermint.

Conclusion: 1. Which way of planting was more effective?

2. Which way produced the best tasting food?

3. What makes a meal vegetarian?

4. Which seed grew faster?

5. Draw a picture of a table setting set correctly.

EXTENDED ACTIVITIES FOR EACH LESSON

Lesson #1 Take a trip to the Lighthouse Beach and observe the plant life near the water and the fish that swim there. Clear cups should be taken so that some samples can be brought back to class. The things they may collect are small marine animals and plants maybe even some sand to build a shore scene in class. This would be be accompanied by a written report explaining the project. Emphasis will be put on how these items are connected.

Key vocabulary words were used in the lesson. The student who comes up with most of them in a minute will get a special privilege or treat.

To improve research skills, a list of the vocabulary words what page they are found on and what part of speech they are will be developed by the teacher. As the words are called out individually, the one who finds the page first and gives the stated information gets a point. The ones who get the most receive a treat.

Lesson #2 Get two more glasses of milk . Put a determined amount of strawberry syrup in each glass and less the students guess how many drops were put in. This could be used as a math/estimation game and who ever comes closest to the correct number of drops can have a glass of flavored milk.

Go to the pond across the street and get a jar full of the water. Compare it to a jar of water taken from the classroom sink. Make a Venn Diagram and contrast and compare the two waters.

Lesson #3 Draw a picture of a tooth that has been eating poor nutritional foods. Also draw those foods. Draw another picture with a tooth that has been eating healthy, nutritious food and those foods. Unhealthy foods may have a negative effect on our stomachs, skin, and fatty tissue but they may also do a lot of damage to our teeth. Posters or charts may be obtained from a local family dentist illustrating the harmful effects of a poor diet on teeth. Pictures of healthy and unhealthy foods can be cut out of magazines like Better Homes and Gardens, Vegetarian Times, and others.

Have the students make a healthy snack pizza. Use a rice or popcorn cake. Spread peanut butter or applesauce on it raisins and coconuts and apple slices can be arranged any way on the snack for pizza. EAT!

Lesson #4 & 5 Plan a trip to the agricultural center on Huntington and Prospect in New Haven. Students can see plants that require much light and other that require very little. Some plants must be watered and fed often while others require little care. Hopefully they will be shown seed being planted, small plant being

transplanted and maybe some food item taken from the plant.

Develop an A to Z book of healthy snacks, from avocado slices to breaded and baked zucchini sticks.

Cook some the of the meal in class together.

Make place mats and have the children dress for the dinner. What a great way to demonstrate etiquette and table manners.

Be sure all the lessons have been entered into student journals.

READING LIST FOR STUDENTS

1. Louise Murphy, " My Garden- a Journal for Gardening Throughout the Year," Published by Scribner's Sons, 1980.

You will learn about composting about planting and tending your garden, about the effects of insects on gardening, and of course about harvesting. A fine book for learning about how to become a gardener

2. Dee Matthews, Allan Zullo, and Bruce Nash,"The You Can Do It! Kid's Diet , published by Holt, Rinehart and Winston, New York, 1985.

In this book the author makes you realize that you, not your parents, must take full responsibility for what you eat.

3. Jan Johnsen, " Gardening Without Soil," Published by J. B. Lippincott, New York, 1979.

This handy step by step guide introduces the materials and methods of soiless gardening. By doing the projects in this book, you'll find out about plants and what makes them grow. This kind of gardening may one day feed the people on our crowded planet.

4. Christopher, Shirley, "Plan for Organic: You Can Start Gardening Organically with No Added Cost," Organic Gardening, Feb 1990 : 42-46.

5. Damsker, Matt, "Grapefruit Cocktail Beats Bad Bugs." (pest control), Organic Gardening , Jan. 1993: 18-20

6. McKeon, Jane Austin, "The Earth-Wise Gardener," Better Homes and Gardens, March 1991: 15-22.

Materials for student use:

Access to the Internet, to he able to do research necessary to support this unit.

BIBLIOGRAPHY FOR TEACHERS

l. Carol Keough, "Water Fit to Drink. "Published by Rodale Press, Emmaus, Pa., 1980.

This book is a guide to the hidden hazards of drinking water and what you can do for water at your home.

2. William V. Tamborlane, M. D., ‘’The Yale Guide to Children’s Nutrition, “ Published by Yale University Press, New Haven and London, 1996.

This book can help you develop and execute guidelines that can be readily incorporated in family life....

3. Barbara M. Dixon, L.D.N, .”Good Health for African Americans,” Published by Crown Publishers, inc., New York, 1994.

This book is the first and only book dedicated to improving the health of all black Americans...

4. Irene Franck and David Brownstone, “ The Green Encyclopedia An A to Z source book of environmental Concerns and solutions.”

5. Bernards, Neal, “The Environmental Crisis- Opposing Viewpoints,” Published by Greenhaven Press, Inc. San Diego, 1991.

6. Jonathan Harr,’’ A Civil Action,”, Published by Vintage Books Random House, New York, 1995.

This book is about house companies pollute water and the result was a leukemia cluster. Many die and the courts never get to the bottom of it. Companies greedy.

7. Vegetarian Times, “Lethal Lawns,” June 1995, p. 19.

This article is about insecticides on lawns and their effect on children.

8. Lipkin, Richard, “Cocaine Each Day Keeps the Bugs Away,” Science News, Oct. 30, 1993: 285.

9. Rogers, Adele T., “Natural Pesticides Gaining Ground,” Lawn & Garden Marketing, Nov/Dec. 1990: 30-33.