

MEETING NATIONAL STANDARDS FOR FAMILY AND CONSUMER SCIENCES THROUGH HOME EQUIPMENT EDUCATION

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Today's youth are preparing a number of their own meals and snacks, completing household chores, and laundering their own clothing. Often, these tasks are performed using home equipment while home alone or without adult supervision. Fewer home equipment courses are taught within secondary Family and Consumer Sciences curriculum and students may graduate without suitable skills to help them operate equipment properly. And, lack of knowledge in many areas of household equipment can make first time purchases, paying utilities, or understanding the role of household technology challenging for young adults.

Furthermore, teachers are challenged to find resources and time to incorporate these needed skills into their courses. This paper will provide a preface for family and consumer science teachers to integrate home equipment concepts into their courses while fulfilling many of the requirements for the National Standards for Family and Consumer Sciences, provide sources of teaching materials, and suggest lesson plan ideas.

Home equipment courses, that usually concentrate on home appliances, are seldom a part of today's secondary Family and Consumer Sciences (FCS) curriculum, and even small units on appliances are taught infrequently. Yet, today's youth, more than ever, are using appliances to prepare their own snacks and meals, complete household chores, and launder their own clothing. According to the 2001 Nickelodeon/Yankelovich Youth MONITOR™, 88% of youth aged 6 to 17 at times fix their own meals. Children many times perform these tasks while home alone without adult supervision or while providing childcare away from home. The question then arises, "Are children knowledgeable enough about this equipment to operate it safely and properly?"

Lack of appliance knowledge can challenge these youth once again as young adults in their first apartment or home. Whether they are using appliances for the first time away from home, purchasing their first appliances, and/or paying utility costs to operate them, a lack of basic knowledge about appliance selection, use, and care can handicap young adults as they face these decisions. Home equipment also accounts for much of the new technological advances in homes, and understanding the role of technology in our lives is essential. Ergonomic design, energy efficiency, and indoor air quality are other factors related to appliances and equipment in the home. These factors may also influence equipment purchase decisions. Additional consideration of appliance quality and the impact on the environment can influence the types of equipment purchased (Goldsmith, 1992).

When deciding which concepts to incorporate into their courses, secondary FCS teachers are guided by the National Standards for Family and Consumer Sciences, established by the American Association of Family and Consumer Sciences. Including home equipment education

into FCS classes is one means of preparing youth and young adults for the future, as well as helping teachers incorporate some of the concepts included in these standards.

In attempting to teach home equipment principles to family and consumer sciences students, however, teachers are challenged to find time in the curriculum as well as educational materials to do so. The purpose of this paper is to introduce teachers to possible home equipment concepts, sources of home appliance teaching materials, and lesson plan ideas for incorporating household equipment concepts into many of the subject matter areas of Family and Consumer Sciences, many of which can satisfy requirements of the National Standards for Family and Consumer Sciences. These subject matter areas include: nutrition/food occupations, housing/interiors/furnishings, child development, clothing and textiles, and consumer education. Ideas for interdisciplinary activities are also included.

Background

Home appliance courses may not be taught at the secondary level, but many Family and Consumer Science teachers are interested in the topic and feel it includes important concepts for students to know. A 1988 Vocational Assessment of New Mexico FCS teachers (Emmel & Cummings, 1988) found that 61% of the teachers surveyed felt knowledge of home appliances would be very important to students in the year 2000. A similar survey of New Mexico FCS teachers in 1996 (Emmel & Cummings, 1999) indicated a slightly larger proportion of the teachers (65%) felt home appliance knowledge would be important in the year 2010. The related topics of home safety and sanitation (82%), energy conservation (81%), and maintaining equipment (70%) were also considered very important for students to know by 2010.

Despite the feeling home appliance knowledge will be important for students, only 24% of teachers in the 1988 study (Emmel & Cummings, 1988) and only 30% in the 1996 study (Emmel & Cummings, 1999) reported emphasizing home equipment in their classes. With the absence of home equipment courses, these concepts were usually included in housing and food preparation courses.

Other important factors for teaching home equipment concepts are background and comfort teaching the topic. Sixty-five percent of the FCS teachers in the 1988 New Mexico teacher survey (Emmel & Cummings, 1988) felt they had an adequate background to teach home equipment, but that percentage decreased to 58% in the 1996 New Mexico study (Emmel & Cummings, 1999). A study in 2000 of Virginia FCS teachers found only 39% of the respondents indicated they were very knowledgeable about appliance selection use and care (Emmel & Lovingood, 2000).

When asked how comfortable they felt teaching about home equipment, teacher responses for the two New Mexico studies were very similar. Eighty-eight percent of the teacher in both studies (Emmel & Cummings, 1988, 1999) felt comfortable teaching about selection, use, and care of small appliances, whereas 84% of the 1988 study and 78% of the 1996 study felt comfortable teaching about the selection, use, and care of major appliances.

As teachers search for new ways to teach FCS concepts, information resources and teaching lesson ideas are valuable. A survey of 2,022 Family and Consumer Sciences professionals was conducted by the Whirlpool Corporation in 1992 to determine the need for updated household equipment teaching resources. Ninety-seven percent of the respondents indicated they needed new resources, and they requested that the resources be easy to use and understand (at all levels) and be affordable (Yust & Dunrud, 1994). Teachers in the 1988 New Mexico study (Emmel & Cummings, 1988) listed textbooks as the most commonly used

reference for housing, interior design, and home equipment class work. Other teaching resources considered helpful by more than 50% of the teachers were videotapes, models/samples, and ideas for activities. A recent electronic survey (Chase, 2001) of secondary FCS teachers in Virginia suggested that many teachers also rely on their own experiences in teaching family and consumer sciences concepts. Although the response sample was small, most teachers agreed that textbooks were commonly used as references only and some teachers are now using the Internet for lesson plan ideas.

In the past, appliance manufacturers have been supporters of home equipment education, providing training and materials for educators. Support in recent years, however, has dwindled. Major appliance manufacturers were recently contacted by the author to determine the availability of home equipment educational materials for teachers. Most companies no longer provide these materials; and if they do, it seems few requests are made to receive them. Today, general appliance information, use and care suggestions, and selection criteria are many times listed on the Internet web sites of major appliance manufacturers. Even though these web sites do not present specific lesson plans, teachers have been found to incorporate the information into lessons (Chase, 2001).

Because teachers rely on textbooks as a teaching resource, three current FCS texts were reviewed for home equipment content. One text found to contain activities on choosing and purchasing appliances (purchase and operating costs, quality, and safety), energy costs, and understanding energy guide labels is *Housing Decisions* by Lewis and Turner (2000). A chapter on home appliances including buying, determining needs, energy efficiency and activities to demonstrate how to purchase appliances was also included in *The Confident Consumer* by Campbell (2000). This text specifically correlates its lessons with the National Standards for Family and Consumer Sciences (for the Consumer and Family Resources area) which can be helpful in designing lesson plans to meet these standards. The third text examined was *Creative Living* by Glosson, Meek, and Smock (1997). It provides suggestions and ideas for incorporating critical thinking skills into lesson plans (as part of their Resources Kit for life skills, decision making, etc.). Specific chapters also include kitchen appliances concepts (cookware/bakeware, appliance materials, variables in cooking and safety considerations). Whether using a textbook, the Internet, or other sources, home equipment or appliance concepts can be incorporated into many of the topic areas covered by the National Standards for Family and Consumer Sciences.

Home Appliance Concepts and Lesson Ideas

Home equipment education can assist teachers with meeting National Standards for Family and Consumer Sciences in many subject matter areas. Five of the areas are discussed below, and each contains important concepts related to home equipment and teaching ideas for incorporating some of the concepts into a lesson. Topic areas, as listed in the National Standards for Family and Consumer Sciences, include: Housing, Interiors and Furnishings; Early Childhood, Education, and Services; Consumer and Family Resources; Textiles and Apparel; and Food Science, Dietetics, and Nutrition.

Housing, Interiors and Furnishings

Introduction

The Housing, Interiors and Furnishing area of Family and Consumer Sciences prepares students to make better home buying decisions, including the selection, use, and care of home appliances. Many careers related to this topic area involve the specification and use of appliances. Such careers include: residential property management; interior design; kitchen, bath, and lighting design; appliance sales; real estate sales; and home building.

Important Lesson Concepts

Housing expenses make up the largest portion of a family's budget, and the purchase of a home can be the single most expensive item a person will purchase in their lifetime. A significant proportion of these expenses are for the purchase and/or operation of home equipment, including energy costs. To become a knowledgeable consumer, students must learn how to select home equipment to meet their needs, use it properly, safely and efficiently, and maintain it for long service. This equipment includes kitchen appliances and laundry equipment, as well as heating and cooling systems, water treatment devices, water heaters, and lighting.

Home equipment knowledge is essential for any home-related careers. Residential property managers must specify equipment for their residences and keep them maintained. Kitchen and bath designers, as well as interior designers, not only specify appliances, but also plan their placement related to adjacent counter and storage requirements. Appliance and real estate sales personnel must be familiar with home equipment functions and features to assist other consumers in their purchasing decisions. Lighting is another important element of home design and use, with which all of these professionals are involved.

Lesson Plan Ideas

- Ask students to find information about one of the appliances they have at home. Have them locate the nameplate and copy the information. Is a use and care book available? Do they understand how to use all of the controls?
- Take a field trip to a large home improvement store or appliance store to evaluate some of the home equipment products on the market.
- Give students a set of equipment specifications and have them shop on the Internet for a product that meets these guidelines.
- Have students interview a residential property manager, builder, or kitchen and bath designer to find out how they use information about appliances and equipment in their profession.
- Interior design students can select appliance models and styles to fit a certain home design theme.
- Students can interview their family or another individual and inquire about their appliance needs and preferences.
- Have student research which appliance choices are best for universal design or aged individuals.
- Have students place appliances into a kitchen plan and explain why they placed them as they did.

Meeting National Standards for Family and Consumer Sciences Education

The following National Standards for Family and Consumer Sciences Education could be met:

- 11.0 Integrate knowledge, skills, and practices required for careers in housing, interiors, and furnishings.
- 11.1 Analyze career paths within the housing, interiors, and furnishings industry.
- 11.2 Evaluate housing decisions in relation to available resources and options.
- 11.3 Evaluate the use of housing and interior furnishings and products in meeting specific design needs.
- 11.6 Evaluate client's needs, goals, and resources in creating design plans for housing, interiors, and furnishings.
- 11.7 Demonstrate design ideas through visual presentation.

Early Childhood, Education, and Services

Introduction

The Early Childhood, Education, and Services area of the family and consumer science curriculum concentrates on knowledge and activities that assist students as they prepare for their role as a child sitter, parent, or future child care employee or teacher. Within this subject matter area, knowledge of home equipment is essential for proper food storage, safe food preparation, the safe use of appliances, issues of indoor air quality, and proper cleaning and sanitation. Understanding food safety principles during food preparation and storage becomes crucial for meals or snacks prepared at home, in childcare centers, or food taken from the home such as packed lunches.

Important Lesson Concept

Proper food storage and handling are essential concepts to know whenever you are working with food to be consumed by humans, especially children. Whether at home, child sitting at another residence, or working in a childcare facility, students must know how to properly use and clean equipment to safely prepare and store food. Students should be aware of how foods must be packaged for cold storage and the recommended refrigerator and freezer temperatures to keep food fresh. Tips on preparing safe sack lunches for school or daycare children would be beneficial.

Instruct students on how to safely prepare snacks in the microwave so they do not need to use a heating appliance while child sitting. Procedures for heating baby food and baby bottles in the microwave should be discussed. Home equipment, such as a dishwasher, is important for sanitizing utensils when illnesses are present. Students also must be aware of the hazards appliances can pose for young children and how to select appliances accordingly. Hot surfaces, accessible controls, sharp corners, and tempting cavities to crawl into are all aspects of appliances that must be carefully considered. The improper use of a gas burning or air depleting appliance or the limited use of ventilation can impact indoor air quality and mold growth, which can be especially problematic for children with respiratory problems.

Lesson Plan Ideas

- A group activity on lunch preparation will illustrate the care needed for preparation and storage of lunch items. Divide the class into three groups. Group one could be given ingredients to fix lunch for children at a home or in a daycare facility (such as a hot dog and fruit). Group two could prepare a deli type lunch that would not require cooking, but would emphasize proper food handling and storage time. Group three would represent a childcare provider that would require families to bring bag lunches and the parent who is preparing

such a lunch. Each group would prepare their lunch according to a preset menu and demonstrate the proper procedures and equipment used in the preparation and storage. The group must explain why it would be necessary to follow this specific procedure.

- Demonstrate the use of a dishwasher for proper sanitation of dishes vs. regular hand washing, especially for knives, cutting boards, and utensils for handling baby food.
- Have students inspect their kitchens at home for any equipment hazards accessible to small children. They should look for such things as hot surfaces, sharp corners, accessible controls, etc. Discuss what they found in class.
- Examine baby food containers and foods for microwave instructions.
- Heat baby food and baby bottles in the microwave oven for varying amounts of time and test the temperature with a thermometer and by taste.

Meeting National Standards for Family and Consumer Sciences Education

The following National Standards for Family and Consumer Sciences Education could be met in this area:

- 4.4 Demonstrate a safe and healthy learning environment for children.
- 4.4.2 Apply safe and healthy practices that comply with state regulations.
- 4.4.4 Provide safe and healthy meals and snacks.
- 4.4.6 Implement basic health practices and prevention procedures for workers and children regarding childhood illness and communicable diseases.

Consumer and Family Resources

Introduction

As future homeowners and home equipment users, knowledge of home equipment selection, efficient use, and redress issues are important for wise consumer resource management. In the Consumer and Family Resources area of family and consumer sciences, students learn strategies for managing their resources through well planned and knowledgeable consumption decisions.

Important Lesson Concepts

With the wide availability of home equipment products and retailers in the marketplace, as well as on the Internet and TV shopping programs, comparison-shopping can be overwhelming if the consumer is not aware of the considerations that should be part of the purchasing decision. Selecting the proper equipment to meet the needs of the family and the tasks at hand will provide the consumer with product satisfaction. In addition, students can learn the value of budgeting for appliance purchases and evaluating which appliance features are needed within this budget range.

Consumer responsibilities do not end with the equipment purchase. Equipment operating costs can make up a large portion of a family's budget. Students can also make better-informed choices related to the lifecycle costs of appliances by gaining an understanding of energy efficiency guides ratings, such as the EnergyGuide label and the Energy Star label. Redress issues and product warranties must also be considered. Students, as consumers, must understand their rights and how to handle problems with equipment when they arise. Warranties, extended warranties in particular, must be scrutinized.

Lesson Plan Ideas

- Have each student simulate replacing an appliance in his or her home. Ask students to interview their family members to find out which features and characteristics (color, size, safety standards, cost, space, energy use, installation, and ease of use) are important to them. A target budget should be set by a parent or guardian. The student should take a family member with him/her to a local retailer or dealer to participate in a simulated shopping trip.
- Have students report on how consumer protection agencies like the Consumers Products Safety Commission and the Federal Trade Commission protect consumers against faulty equipment.
- Involve students in a comparison-shopping simulation. Set a few parameters for a particular appliance (capacity, features, options, etc.). Have the students either compare products from two manufacturers on the Internet or two stores in their community. They should then identify the appliance that would be the best choice. Upon completing the activity, the student could give a five-minute presentation on their shopping experience and how they arrived at their final choice.
- If the classroom has access to the Internet, ask the students to visit the web site <http://www.energystar.gov> to find a list of appliances that carry the Energy Star label. What makes these appliances more energy efficient than other appliances of their type?
- At a local appliance retail store, ask students to compare EnergyGuide labels on two similar appliances to see how much energy costs can vary. Have the students write down the energy consumption figures and the purchase price for each appliance. In the classroom, calculate the lifecycle cost of each appliance to see the differences.
- Have the students shop for an appliance with and without the Energy Star label and compare the difference in energy cost.
- Have students shop for an appliance on the Internet. What information is available online? Is there a way to actually buy the product online?
- Ask students to obtain a use and care manual for an appliance of his/her choice. Use and care manuals for appliances can provide invaluable information for helping family and consumer sciences educators. These manuals can instruct proper procedures in using appliances (cleaning, maintenance), provide troubleshooting sections that consumers can use for help before calling for service, and some manuals include recipes. Extra manuals can be obtained from <http://www.techmanual.com/appliances.html>. Have students examine the manual to see what information they can find. What information is missing? Develop a worksheet that contains questions about the manual.
- Collect examples of appliance warranties and extended warranties from different companies. Discuss the merits and drawbacks of each, especially the cost to purchase extended warranties.
- Have students view a TV shopping network ad for an appliance. In class or on paper, have the students discuss purchasing an appliance in this manner.

Meeting National Standards of Family and Consumer Sciences Education

The following National Standards for Family and Consumer Education could be met:

- 2.1 Demonstrate management of individual and family resources, including food, clothing, shelter, health care, recreation, and transportation.
 - 2.1.2 Examine how individuals and families make choices to satisfy needs and wants.

- 2.1.3 Implement decisions about providing safe and nutritious food for individuals and families.
- 2.1.5 Implement decisions about housing and furnishings.
- 2.3 Analyze policies that support consumer rights and responsibilities.
 - 2.3.1 Examine state and federal policies and laws providing consumer protection.
 - 2.3.3 Examine skills used in seeking information related to consumer rights.
- 2.4 Evaluate the impact of technology on individual and family resources.
 - 2.4.2 Examine how media and technological advances impact family and consumer decisions.

Textiles and Apparel

Introduction

Learning about the proper use of clothes washers and dryers can help students understand the value of taking care of their clothing and learn how to take full advantage of equipment for specific laundry situations. Clothes can last longer with proper care and laundering, thus saving budget dollars long-term for the family's clothing budget.

Important Lesson Concepts

Proper laundry procedures are important for protecting fabrics and helping them to stay looking new longer. With new fibers being introduced on a continuous basis, students and other consumers must become aware of their proper care. In addition to learning about how washers and dryers work, students must become familiar with differences in detergents and the effects of hard water on clothing. For specific laundry situations, students should be aware of how to use equipment for stain removal, the importance of proper temperature and laundry cycles, and the need for proper sorting. In addition, students can learn how to reduce ironing by using the proper drying cycles.

Lesson Plan Ideas

- Have students experiment with varying fabrics and laundry techniques. Find inexpensive garments at a local thrift store or yard sale. Select both dry clean only and washable items, and the washable garments can be a combination of hand wash, cold water only wash, and wrinkle free fabric garment items. Cut the garments in half so that two exact pieces are formed. Some students should be given a dry-clean-only garment and asked to demonstrate what happens when one half is washed while leaving the other half as is. Other experiments could involve mixing whites and colors, washing cold water only fabrics in hot, laundering hand wash only items in the clothes washer, and washing permanent press items with two different cycles to evaluate wrinkling. For classrooms without washers and dryers, students could complete the same activity at home and present their results to the entire class. If it is not feasible to use clothing for the activities, swatches of fabric might be substituted in the proper fabrics to be tested.
- Provide students with garments that do not have care labels. Based on what they have learned about textiles, have students evaluate the fabrics and suggest the proper clothes washer and dryer cycles for their care.

Meeting National Standards for Family and Consumer Sciences Education

The following National Standards for Family and Consumer Sciences could be met:

- 16.0 Evaluate fiber and textiles materials.
- 16.2.4 Assess effects of textiles characteristics on design, construction, care, use, and maintenance of products.
- 16.2.5 Select appropriate procedures for care of textiles products.

Food Science, Dietetics, and Nutrition

Introduction

There are many ways in which the study of home equipment can be incorporated into the area of food science, dietetics and nutrition. In addition to food safety discussed earlier in the Early Childhood, Education, and Services section, food quality and nutrition can be affected by the proper selection and use of appliances.

Important Lesson Concepts

Numerous relationships exist between food quality and the methods of cooking, and the appliance choice and its use can directly affect the outcome. One important aspect of food quality many times impacted by food preparation is nutritional value.

Concepts to teach include: gas vs electric cooking, the effects of convection cooking, microwave vs conventional cooking, the relationship of cookware to cooking appliance, speed cooking vs microwave vs conventional, cooktop vs small appliance, and lid vs no lid cooking. In addition to food quality, preparation time can be another variable for comparison. To insure a safe food product, students must learn to keep cold foods cold and hot foods hot. This is especially important when handling leftovers.

Lesson Plan Ideas

- Experiment with preparation methods by comparing products cooked in a microwave oven, conventional oven, and on a cooktop.
- Test different types of ovens (gas, electric, convection) to determine their effect on the quality of food when prepared with various types of cookware and bakeware, i.e., glass, aluminum, stainless steel. Prepare a food such as sugar cookies or biscuits. Their light color will show browning patterns more easily. This activity will analyze the effect of different baking modes and different baking pans on browning.
- Surface cookware could be tested on various range tops and compared as to speed and evenness of cooking. Many times poor results may be the fault of the cookware and not the cooking appliance.
- Have students prepare a food like pudding by different methods (cooktop vs microwave) or on different types of cooktops using a variety of cookware (glass, aluminum and stainless steel). Compare the products related to time, easy of use and evenness of cooking. The object here is to analyze heat transfer using the various materials and methods.
- Illustrate the importance of proper food storage on food quality and food safety. Have students monitor freezer and refrigerator temperatures using thermometers to make sure they are at proper levels to keep food safe. Instruct students to find food expiration dates on packages. Place wrapped and unwrapped food items in the refrigerator and check to see how they look after a few days.
- Ask students to prepare and load a dishwasher using various types of dishes and containers and demonstrate the consequences of improper loading (broken dishes, soap residue, etc.). Point out the use of heat in sanitation of eating utensils.

Meeting National Standards for Family and Consumer Sciences Education

The following National Standards for Family and Consumer Sciences Education could be met:

9.2 Apply risk management procedures to food safety, food testing, and sanitation.

9.2.1 Determine factors that contribute to food borne illness (5).

9.2.5 Practice good personal hygiene/health procedures (4).

9.2.6 Demonstrate procedures for receiving and storage of raw and prepared foods (4).

In addition, portions of other areas of family and consumer sciences could be met in the following areas:

Food production and services:

8.2 Demonstrate food safety and sanitation procedures.

8.2.7 Demonstrate food handling and preparation techniques that prevent cross contamination between raw and ready-to-eat food and between animal or fish sources and other food products (5)(3).

Nutrition and Wellness:

14.4 Evaluate factors that affect food safety, from production through consumption.

14.4.1 Determine conditions and practices that promote safe food handling.

14.4.2 Appraise safety and sanitation practices throughout the food chain.

Interdisciplinary Approaches to Equipment Education

Other areas of a secondary school curriculum - such as language arts, mathematics, and science - can be integrated with the family and consumer sciences curriculum through the use of household equipment concepts. Family and consumer science teachers can work with the teachers of other subjects to prepare problems or homework that contain real life examples for students that incorporate home equipment concepts.

Science has always been an integral part of family and consumer sciences. Chemistry lessons can incorporate the study of soaps, detergents, and household cleaners and their effect on dirt and germs. The caramelization process can be illustrated by cooking a honey cake in the microwave and observing the browning of the cake's top (Cobb, 1994).

Physics principles are present in many activities using household equipment (DeMerchant, Lytton, Lovingood, & Lytton, 1995). Heat transfer in an oven or on a cooktop, the conductivity of various cookware materials, the reflectance of waves in a microwave oven, and the functioning of a refrigeration systems are just a few of the concepts that can bring physics to life in the kitchen.

Mathematics instructors can use temperature change or energy use calculations for appliances to practice mathematical equations. Language arts assignments could require reports on appliance comparisons or the results of various experiments. Use and Care manuals can be evaluated for their ease of understanding.

Standards of Learning Requirements

We would be remiss not to mention the influence of state mandated standards of learning tests, or other similar student assessment tests, on curriculum. The aforementioned activities related to home equipment concepts could be used to meet these standards, including the areas of

language arts (writing), mathematics (measuring and amounts), and science (chemistry and physics).

Higher Order Thinking Skills

Home equipment education can also be used to incorporate higher order thinking skills into a curriculum. Since we live in a world of constant change, higher order thinking skills are needed for more complex tasks as future adults, and these skills are essential for problem solving and decision-making. Higher order thinking skills help students become better consumers (DeMerchant, Lytton, Lovingood, & Lytton, 1995). Educators can include higher order thinking skills by using the suggested activities listed in this paper. Troubleshooting problems, following instructions in the use and care manuals, and product comparisons, are a few examples of how these skills can be emphasized.

Summary

Household equipment concepts are an important component of a family and consumer sciences curriculum. Teachers feel these concepts are important; however, many teachers do not actually incorporate them into their curriculum. Reasons for this may include limited time in teaching exploratory and high school courses, a lack of teaching materials and ideas, or more emphasis on state standards of learning (Chase, 2001).

A list of resources that may be helpful in designing home equipment lesson plans has been compiled and included below. In addition to providing home equipment information, some of the latest textbooks also include ideas for meeting the requirements of the National Standards. Following is a list of possible resources:

- Appliance manufacturers users manuals, <http://www.techmanual.com/appliances.html>
- Consumer's Resource Handbook, Consumer Information Center, (phone) 1-888-878-3256, <http://www.pueblo.gsa.gov>
- Energy Star Labels: <http://www.energystar.gov>
- Glencoe-McGraw Hill Publishers, (phone) 800-334-7344, <http://www.glencoe.com>
- Instructional Materials Laboratory, University of Missouri-Columbia, (phone) 800-669-2465 <http://www.iml.coe.missouri.edu>
- University of Nebraska-Lincoln, Information on purchasing home equipment, <http://www.ianr.unl.edu/pubs/housing/>
- V-TECS, Southern Association of Colleges & Schools, (phone) 404-679-4501 ext. 543, <http://www.v-tecs.org/>

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