

Section 8 Technology and Home Economics

I. OVERALL OBJECTIVES

To deepen understanding of the relationship between our lives and technology through acquiring basic and fundamental knowledge and skills necessary for life, and to develop the ability to and a positive attitude toward planning and creating a proactive life.

II. OBJECTIVES AND CONTENT FOR EACH FIELD

[Technology]

1. Objectives

To enable students to acquire fundamental and basic knowledge and skills related to materials and their processing, energy conversion, nurturing living things and information processing through practical and hands-on learning activities such as production (monodukuri) , and to deepen understanding the relationship between the technology and both society and the environment, while also fostering the ability and attitude to evaluate and utilize technology properly.

2. Content

A. Technology of materials and their processing

- (1) The following items should be targeted in the instruction with regard to the technology used in our lives and industries:
 - (a) To deliberate the roles of technology in improving our lives and in succession and development of industries.
 - (b) To deliberate the relationship between technological improvements and the environment.
- (2) The following items should be targeted in the instruction with regard to materials and their processing methods:
 - (a) To understand the characteristics of each material and their use .
 - (b) To understand processing methods appropriate for each material and be able to use tools and equipments safely.
 - (c) To deliberate the proper evaluation and the use of technology of materials and their processing.
- (3) The following items should be targeted in the instruction with regard to the design and production of objects applying technology of materials and their processing:

- (a) To deliberate the functions and structures appropriate for their purposes and usage requirements.
- (b) To understand the methods for communicating ideas and be able to make a production drawing.
- (c) To be able to fabricate parts, assemble them and finish products.

B. Technology of energy conversion

- (1) The following items should be targeted in the instruction with regard to the mechanism of energy converting devices and their maintenance checks:
 - (a) To understand energy conversion methods and the mechanisms for power transmission.
 - (b) To understand the basic mechanisms of equipments, and to be able to perform their maintenance checks and to prevent accidents.
 - (c) To deliberate the proper evaluation and use of technology of energy conversion.
- (2) The following items should be targeted in the instruction with regard to the design and production of the devices applying the technology of energy conversion:
 - (a) To be able to select and design the functions and structures required of the products.
 - (b) To be able to assemble and adjust the products , as well as to wire and inspect electric circuits.

C. Technology of nurturing living things

- (1) The following items should be targeted in the instruction with regard to the habitats of living things and technology for nurturing them:
 - (a) To understand methods for managing the conditions appropriate for nurturing living things and their habitats.
 - (b) To deliberate the proper evaluation and use of technology of nurturing living things.
- (2) The following items should be targeted in the instruction with regard to the cultivation of plants or animals by applying technology of nurturing living things:
 - (a) To be able to draw up the plans to nurture the living things aimed to do so , and to be able to cultivate plants or animals .

D. Technology of information processing

- (1) The following items should be targeted in the instruction with regard to information and communication networks and information ethics :

- (a) To understand the main section of computers and their basic information processing mechanisms.
 - (b) To understand the basic mechanisms for making use of information in the information and communication networks.
 - (c) To understand responsibilities for copyrights and transmitted information and to deliberate information ethics.
 - (d) To deliberate the proper evaluation and use of technology of information processing.
- (2) The following items should be targeted in the instruction with regard to the design and production of digital works:
- (a) To understand the characteristics of each type of medium and their use, and to be able to design works.
 - (b) To be able to combine various types of media and express the ideas and convey the messages.
- (3) The following items should be targeted in the instruction with regard to automatic measurements and controls via computer programs:
- (a) To understand the basic mechanisms for automatic measurements and controls using computers.
 - (b) To deliberate the procedures for processing information and be able to create simple programs.

3. Handling the Content

- (1) With regard to (1) of “A. Technology of materials and their processing” in “Content,” it should be taken up that technological advancements contribute to the effective use of natural resources and energy and the conservation of natural environments and also that its manufacturing technology has sustained Japanese traditions and culture.
- (2) With regard to (1)-(b) of “B. Technology of energy conversion” in “Content,” consideration should be given to troubles like electric leaks and electric shocks.
- (3) With regard to (2) of “C. Technology of nurturing living things” in “Content,” it should be kept in mind that there should be no damage on ecosystems particular to each local region .
- (4) With regard to “D. Technology of information processing” in “Content,” the following items should be dealt with .
 - (a) With regard to (1)-(a), methods for digitizing information and the amount of information should be covered. For (1)-(c), consideration should be given to the necessity of safeguarding intellectual property with regard to information

and communication networks.

- (b) With regard to (2), it should be emphasized that safeguarding personal information is necessary according to the kind of media .
- (5) With regard to all of the contents, an attitude should be fostered of striving to create the new paradigms and apply a sense of ethics with regard to technology.

[Home Economics]

1. Objectives

To enable students to acquire basic and fundamental knowledge and skills necessary for an independent life through practical and hands-on activities relating to food, clothing and housing; to deepen understanding of the functions of a family, have the students look toward their future lives and take up issues to develop the skills and attitude towards a better life.

2. Content

A. Family, home and child growth

- (1) The following item should be targeted in instruction with regard to the growth of students themselves and their families:
 - (a) To consider one's personal growth and its connection with one's family and home life
- (2) The following items should be targeted in instruction with regard to students' home and family relations:
 - (a) To understand the basic functions of the home and family, and the connection between family life and the community
 - (b) To take an interest in one's own family relationship from here onward and think about ways to improve better family relations
- (3) The following items should be targeted in instruction with regard to children's lives and their families:
 - (a) To understand characteristics of child development and their lives, and to understand the role of families as an environment for raising children
 - (b) To understand the significance of child's play through activities such as observing children and creating playthings
 - (c) To deepen the students' interest in children and be able to devise ways for them to be involved with children through activities such as contact with children
 - (d) To take an interest in the lives of families and children, and be able to devise initiatives, set up plans and put these into practice with regard to family

relations and children's lives with a task in mind.

B. Food, cooking and independent life

- (1) The following items should be targeted in instruction with regard to lower secondary students' dietary habits and nutrition:
 - (a) To take an interest in one's own dietary habits, understand the role that food plays in life and think about eating habits that are good for one's health
 - (b) To understand the types of nutrients and their functions, and to think about characteristics of the nourishment that lower secondary students require
- (2) The following items should be targeted in instruction with regard to how to select a daily menu and foods:
 - (a) To understand the nutritional qualities and the types of food, and general quantities of food that lower secondary students need each day
 - (b) To plan an appropriate menu for lower secondary students for a day
 - (c) To be able to distinguish the quality of food and select them according to use
- (3) The following items should be targeted in instruction with regard to the preparation of a daily meals and regional food culture:
 - (a) To be able to cook basic daily meals. To also be able to manage food and cooking utensils appropriately while keeping safety and hygiene in mind
 - (b) To understand regional ingredients culture through cooking which utilizes regional foods
 - (c) To take an interest in eating habits, and be able to devise, set up plans for, and put these into practice for one's daily meals or activities like cooking which utilizes regional ingredients with a task in mind

C. Clothing , housing and independent life

- (1) The following items should be targeted in instruction with regard to selecting and caring for clothing:
 - (a) To understand the connection between clothing and social life, and to be able to understand what to wear according to the purpose and by using one's individuality
 - (b) To understand the necessity of utilizing clothing in a planned manner, and to be able to select it appropriately
 - (c) To be able to care for daily wear according to the clothing material and its condition
- (2) The following items should be targeted in instruction with regard to the

function of housing and modes of living:

- (a) To consider family living spaces and understand the basic functions of housing
- (b) To understand how to lay out an indoor environment that considers family safety, and be able to devise comfortable modes of living
- (3) The following items should be targeted in instruction with regard to life techniques such as clothing habits and manner of housing:
 - (a) To be able to devise techniques for enriching one's life through making things using cloth
 - (b) To take an interest in clothing and housing, and be able to devise initiatives, set up plans and put these into practice concerning clothing habits and manner of housing with a task in mind

D. Daily consumption and environment

- (1) The following items should be targeted in instruction with regard to domestic life and consumption:
 - (a) To take an interest in one's personal and family's consumption, and understand the basic rights and responsibilities of consumers
 - (b) To understand characteristics of marketing methods, and be able to appropriately select, purchase and use the goods and services necessary for life
- (2) The following items should be targeted in instruction with regard to domestic life and the environment:
 - (a) To think about the impact that one's personal and family's consumption has on the environment, and be able to devise and practice a consumer life that takes the environment into consideration

3. Handling the content

- (1) With regard to "A. Family, home and child growth" in "Content," the following items should be dealt with.
 - (a) With regard to (1), (2) and (3), these should be mutually interrelated, and consideration should be given to centering these around learning activities like practice, observation and role-playing.
 - (b) With regard to (2)-(a), touching on the connection with people in the community, such as the elderly, should be kept in mind.
 - (c) With regard to (3)-(a), the importance of one's surroundings in childhood and the formation of basic relationships of trust and lifestyle habits during this time should also be covered. With regard to (3)-(c), allowing the students to

visit places like kindergartens and daycare centers and to contact with children should be kept in mind.

- (2) With regard to “B. Food, cooking and independent life” in “Content,” the following items should be dealt with.
 - (a) With regard to (1)-(b), water’s function and dietary fiber should also be touched on.
 - (b) With regard to (2)-(c), the advantages, disadvantages and labeling of the perishable foods and processed foods used in cooking practice should primarily be dealt with.
 - (c) With regard to (3)-(a), fish, meat and vegetables should primarily be dealt with and basic subjects should be covered. For (3)-(b), the significance of using mainly regional or seasonal foods should be covered with a central focus on cooking practice. In addition, food for traditional regional events and local cuisine can also be covered.
 - (d) With regard to instruction related to meals, consideration should be given to improving dietary education in accordance with the characteristics of Technology and Home Economics.
- (3) With regard to “C. Clothing , housing and independent life” in “Content,” the following items should be dealt with.
 - (a) With regard to (1)-(a), basic ways of putting on Japanese clothing can be dealt with. For (1)-(b), things to keep in mind regarding the labeling and selection of ready-made clothes should be covered. For (1)-(c), caring for daily wear should primarily deal with washing and mending.
 - (b) With regard to (2)-(a), plotting living spaces by using simple diagrams should be dealt with.
 - (c) With regard to (3)-(a), this should be related to (1)-(c), and should primarily deal with manufactured goods on which mending techniques can be used.
- (4) With regard to “D. Daily consumption and environment” in “Content,” the following items should be dealt with.
 - (a) This should be related to the learning in “A. The family, home and child growth,” “B. Food, cooking and independent life” and “C. Clothing , housing and independent life” in “Content,” and should allow the students to learn in a practical manner.
 - (b) With regard to (1), this should be covered by relating it to the daily consumer behavior of lower secondary students.

III. SYLLABUS DESIGN AND HANDLING THE CONTENT

1. In designing the syllabus, consideration should be given to the following:

- (1) With regard to the school hours for Technology and Home Economics, these should be allocated and taken by the students based on a holistic syllabus with a view toward the three grades and without undue emphasis on either section. For this, one or two of the three items of (3)-(d) of “A. Family, home and child growth,” (3)-(c) of “B. Food, cooking and independent life” and (3)-(b) of “C. Clothing , housing and independent life” in the “Content” for Home Economics should be selected for the students to take.
- (2) The school hours devoted to each item in “A. Technology of materials and their processing” through “D. Technology of information processing” in the “Content” for Technology and in “A. Family, home and child growth” through “D. Daily consumption and the environment” in the “Content” for Home Economics, as well as the grade in which the students take them, should be appropriately determined by each school in accordance with the circumstances of the region, school and students. (1) of “A. Technology of materials and their processing” in the “Content” for Technology and (1) of “A. Family, home and child growth” in the “Content” for Home Economics should be learned at the beginning of Grade 1. This is done in order to help students gain an idea of learning in lower secondary school based on learned in elementary school “Drawing and Manual Arts” and “Home Economics” , respectively.
- (3) For each item and the sub-items listed under them, appropriate themes should be established and plans created in order to organically relate these to one another and expand upon them in a comprehensive manner. In doing so, consideration should be given to clarifying the connection between other subjects and enabling integrated, developmental instruction based upon the learning from elementary school.
- (4) Based on the objectives of moral education listed in Sections I-2 of Chapter 1 “General Provisions” and in Section I of Chapter 3 “Moral Education,” instructions concerning the content listed in Section II of Chapter 3 “Moral Education” should be given appropriately. The instructions should be in accordance with the characteristics of Technology and Home Economics, and should be related to the period of moral education.

2. In providing instruction on the content for each field, consideration should be given to the following:

- (1) Practical, hands-on learning activities should be reinforced so that students can

acquire fundamental and basic knowledge and skills, deepen their understanding of basic concepts and realize the joy of work and the pleasure of accomplishment.

- (2) Learning oriented towards problem-solving should be reinforced and cooperation with families and the local community should be obtained so that students can apply the knowledge and skills that they have learned to their everyday lives.
3. For practice instruction, learning environments should be arranged by taking the safety management of the facilities and equipment into consideration. In addition, thorough instruction on accident prevention which takes note of the handling of things like fire, tools and materials should be provided, and sufficient attention should be paid to safety and hygiene.
4. When dealing with each item of “Content,” consideration should be given to the improvement of learning activities, such as activities in which the students arrange and consider the results from practice related to clothing and eating habits and production (monodukuri), or the activities in which they are expected to think of or explain orally or in written form by showing tables or graphs and using concepts in order to solve problems they may face on a daily basis.