Supporting Home Economics Education In Developing Countries

Handbook of Home Economics

March 2007

Japan Women's University Asian Home Economics Education Cooperation Project

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General Structure of Handbook

1. General Structure

(1) History

Although the appellation differs according to the stage of school education in the context of postwar educational reform, "domestic science" has established a firm place in schools as a subject taught to both boys and girls over the past sixty years.

Looking at the situation in other Asian countries, home economics is taught in countries including Singapore, South Korea and Taiwan, but it does not form part of the curriculum in most other countries, where one may surmise that it is considered to be a subject whose content should be transmitted in the home from parent to child. Accordingly, bearing in mind that daily life proceeds on the basis of the home, there would appear to be a lack of awareness of the need for education in connection with everyday living, and even if education of some kind is provided in a fragmentary manner, the content tends to be unbalanced and unsystematic. It has been pointed out that children are not acquiring the knowledge that they need for the conduct of everyday life. With regard to a home economics curriculum the aims of which are to enable people to get by on their own in everyday life and to create their own lives within the home, our aims have been to create a home economics handbook as part of our educational cooperation activities and to promote home economics education in developing countries.

We hope to see the home economics handbook being used as a model for the promotion of home economics education in developing countries in Asia. We are proposing an educational model based on the science of home economics for use in activities implemented by educationalists in developing countries and by overseas personnel dispatched to developing countries. We hope that this model will be used in accordance with the actual conditions applying in developing countries and that it will assist in the promotion of education in home economics.

(2) Points considered when compiling the handbook

The following points were taken into consideration when compiling the handbook, bearing in mind that we are dealing with developing countries.

- Support will be provided with efforts to preserve a particular country's distinctive character while placing importance on traditions and culture.

Every country in the developing world possesses its own unique characteristics, and it is therefore not possible to group all countries together into a single bloc. Each country possesses a culture that has been cultivated in the course of a long history. This culture is the symbol of the nation and is something that people take great pride in as a manifestation of their traditions. It is on the basis of this realization and by making use of culture that the handbook can be arranged and put into use.

- On the assumption that the aim is to have an effect on the home and the local community through the discipline of home economics, we hope to provide support in enabling children to serve as the means whereby the home and local communities are able to develop in a favorable direction.

Science and culture form parts of the discipline of home economics with its background in home economics education, and study in this area is underpinned by science and culture. Children in developing countries are likely to be very closely linked to the demands of everyday life. This means that by studying a home economics curriculum targeted at life in the home, they become able to look at everyday life in a scientific frame of mind and are able to act and behave accordingly. Ideally, they should be able to create a new culture of everyday life as a consequence of studying the home economics curriculum. It is to be hoped that this new culture will spread through the local community and move life in the home and in the community in a positive direction.

- Efforts have been made to create content with consideration to the flow of study so that those concerned in developing countries and personnel sent from overseas with no experience of providing instruction in the field of home economics are able to provide guidance easily with reference to the handbook. In this sense, the handbook is intended to serve as an instruction manual for use by teachers.

Study procedures and materials have been devised in such a manner that those concerned in developing countries and anyone else with no experience of teaching are able to provide instruction with ease simply be referring to this manual. The materials contain trustworthy information including Japanese data and international data. We have given consideration to the use of materials associated with specific countries in accordance with national conditions and the use of data from Japan for purposes of comparison.

We have not presumed any specific countries in this regard and have included content that should be applicable to any country. The content should thus be used selectively in accordance with applicable conditions.

(3) Structure of content

When considering the content of the handbook, bearing in mind that the academic background to home economics education in Japan is home economics, we decided to divide up the content in accordance with the categories employed in the field of home economics. At the same time, since each academic discipline is based on the curriculum guidelines issued by the Ministry of Education, Science and Culture, we considered the structure for this model on the basis of the curriculum guidelines for all stages from primary school through to senior high school and with reference to the titles and content of textbooks.

The content is divided into five areas as follows: 1) The family and family life; 2) Dietary life; 3) Clothing life; 4) Dwelling life; 5) Consumer life and natural resources and the environment.

Each area has at its core the general and basic aspects of home economics provided for in the curriculum guidelines for senior high schools. The content of the guidelines was taken as the major items, the guidelines shown on the basis of the content were taken as the intermediate items, and the guidance items that make up the guidelines were taken as the minor items. The study content of junior high schools and primary schools was analyzed in similar fashion.

On the basis of analysis of the curriculum guidelines, we studied content assuming a junior high school level in developing countries. Depending on the content, it is possible to handle the details in the contexts of primary education, upper secondary education and occupational education.

(4) Structure of each area

In the case of each area, on the first page details are given of ideals relating to major items along with commentaries and description of how the content should be used. Depending on the area in question, there are a number of distinctive features as regards how they should be handled, and the structure of the course has been devised with consideration given to making full use of these features.

From the second page onward, we have devoted one or two pages to each of the minor items with the aim of explaining the purpose of study, the duration of study, the actual course of study, examples of application and providing commentaries. In order to facilitate extraction of the study content and activities, we have as far as possible attempted to include photographs, illustrations, figures and data. In anticipation of the matters that children will need to think about, understand and master on the basis of the study activities, we have included such examples with the aim of facilitating study.

Let us now take a look at the items that have been taken into consideration in each field in connection with drawing up the content.

I The family and family life

- The minor items that should be taken into consideration when proceeding with study were taken as independence, health and safety, and equality.
- Since values and approaches to the family and family life are very varied, we placed importance on the process of decision-making by children, with consideration to the need to avoid imposing values on them.
- Efforts were made to incorporate items with a high degree of necessity such as international treaties and agreements, etc. (e.g. the five rights of the elderly, namely independence, participation, care, self-realization and dignity).
- The materials were drawn up with a view to devoting one hour to each item, and the study flow was considered with actual lessons in mind.

II Dietary life

- Matters involving basic knowledge of daily diet are indicated and efforts are made to ensure that students are able to think for themselves about what balanced meals are all about.
- Efforts have been made to ensure that the study content is able to come alive so that students study about the properties of foods and their nutrients and about meals in the context of everyday life.
- Every country has its own distinctive culinary culture as reflected in cooking methods and in the materials used. The examples in this case are taken from Japan, but they should be substituted and used accordingly in deference to the culinary culture of each country.
- Emphasis is placed on a scientific standpoint as reflected in use of the term "cuisine".

III Clothing life

- Students study clothing with consideration to health and safety, and it is to be hoped that this will enable them to adopt a self-reliant attitude to clothing.
- The connections between regions, climatic conditions and clothing are indicated on the basis of examples applying specifically to Japan, and they should therefore be adapted in accordance with the conditions that apply in each country. The same applies to examples of production, and for this reason we have included items that can be sewn by hand.
- The materials of which clothes are made and the manner in which they are handled are essentially the same in each country.

IV Dwelling life

- This is an area not often treated in the context of education in Asia. There are major differences from one country to another in the layout and size of housing. We have made efforts to cover the whole field of living conditions relating to housing.
- The structure has been devised in line with the basic conditions for healthy living environments proposed by the World Health Organization, namely safety, health, efficiency and comfort.
- We have shown examples of Japanese homes and homes from countries all over the world in visual form with the aim of getting students to think about the differences between their own living conditions and those in these other countries.
- As pupils advance from the stage of primary education to that of secondary education, they should widen their perspective from the home outward to community facilities and the natural environment. They also need to acquire specialized knowledge in the course of secondary education.

V Consumer life and natural resources and the environment

- Students should be encouraged to understand the commodities, services and the flow of money that support their daily lives.
- Economic conditions and distribution conditions differ from one country to another. Beginning from the standpoint of investigating what is going on in one's own country and what specific problems are being encountered in connection with everyday life, the student's perspective needs to be expanded from problems in his or her immediate vicinity toward problems affecting society as a whole.
- A joint international awareness is assumed on the basis of the eight rights and five responsibilities of the consumer.
- The focus in the field of the environment is placed on conservation of the environment from the perspective of consumer activities.

(5) Conclusion

Promotion of home economics education in developing countries is significant in that home economics forms an important part of girls' education as well as contributing to the empowerment of women within society. Most countries are aiming to create societies in which men and women are able to participate jointly. In order to make this possible, home economics education provides students with the opportunity to study how families are able to lead self-reliant lives and to acquire the knowledge and skills required for them to lead fulfilled lives. While placing importance on one's own country's culture and traditions, efforts need to be made to create and to hand on new manifestations of culture to subsequent generations.

Just as home economics education is provided in the context of school education, it is also likely to provide useful in the context of adult education, for example in the education of mothers and guardians. One possibility in this regard is education that brings guardians and members of the local community within its orbit, and it is to be hoped that home economics education can thus serve as a point of contact between the local community and schools and other places of learning.

Reference literature: 1) 2003 Report, p. 19

2. Examples of use of the home economics handbook

(1) Unit method

There is a method of study guidance that involves assembling educational content in the form of a single unit method. This unitary method study includes the following methods: 1) unitary method study involving educational materials whose content comprises a combination of knowledge and technology (Hegelian school); and 2) empirical unitary method study whose content comprises a combination of experiences for solving problems that occur in real life situations (Dewey school).

The handbook makes use of and designs the approaches underlying these two modes of unit method study. A feature is that the educational content is put together into a single unit on each page so that lessons can be begun from anywhere. When giving a lesson, it is necessary to read the "Aims of Study" and then to grasp precisely what should be taught in the lesson to pupils. The page should be selected after closely examining the way of life of the children in front of you, listening to the opinions of parents and guardians and of members of the local community, and thinking about what exactly should be taught to children at that particular moment.

For example, when teaching "health and nutrition" and "our growth and nutrition", it is likely to be a good idea to begin by measuring the children's height and weight. This is because, depending on where the teaching is being provided, there may be children who are unaware of their own height and weight. In this way, the educational content should involve getting children interested in their own bodies and teaching "the relationship between our growth and food". In the case of "people and clothing" and "the functions of clothing and methods of wear", photographs of the children should be taken and used as teaching materials. In situations where it is not possible to take photographs, drawings should be made of the daily lives of the children, and these drawings can then be used as the basis for giving consideration to the functions of clothing.

Efforts should be made with recourse to the handbook to ensure that the educational materials accord with actual conditions. The pictures and illustrations in the handbook may also be used.

Introduction	Bring up topics and make efforts to ensure that children are able to direct
(5 minutes)	their attention to the lessons so that they can show interested in the lessons.
	Hints to this end are given in 1) in the handbook, for example bringing along
	actual items and showing pictures.
Development	Make sure that children are able to grasp the educational content through
(35 minutes)	their own activities. In order to get the children to review and transform their
	daily lives, it is important not just to create a relationship merely involving
	teaching and studying but also to establish mutually beneficial relationships
	whereby the children are able to teach and learn from each other. Efforts
	should be made so that children are able to master the educational content,
	thereby contributing to empowerment of the home and of the local
	community as a whole.
Summary	The points studied in the lesson should be reviewed and thought should be
(5 minutes)	given to precisely which points are most important.

(2) Perspectives when creating lessons

The purpose of lessons is to enable children to take another look at their lives and to transform them with a view to achieving well-being in the forms of happiness, welfare and health. In order to achieve this, study of home economics possesses the following features:

1. Comprehensive study (study involving emphasis on positive activities and stimulating interest on the part of children, whereby children are able to see study not as a mere compendium of knowledge and technology but as a rounded whole with significance for their own everyday lives).

2. Interdisciplinary study (study backed up by a variety of different disciplines including economic science, the study of clothing, the study of nutrition, the study of the family and society, study of housing, and study of the environment).

3. Study based on practical experience (study that emphasizes experiences appealing to all the children's senses).

4. Field study (study involving not only sedentary study in the classroom but also practical work, collecting activities, on-site visits and field investigations using the school space and outdoor spaces).

5. Study open to the local community (study in which local people are invited to take part in the classroom, local resources are used in lessons, and children have the opportunity to go out into the community).

6. Study in which children are themselves the main protagonists (study involving activities whereby children play roles within society and in connection with nature and with other people, including experiments, practical study, observation, examination of written materials, oral interviews, discussions, debates and role-playing, etc.).

7. Study entailing the pursuit of fairness (study involving re-examination of everyday living from children's perspectives and from the perspective of social discrimination involving questions of gender, etc.).

8. Study aimed at ensuring sustainable living (study aimed at ensuring lifestyles of health and sustainability).

(3) Curriculum

Curriculum development is all about creating study objectives, content, methods and management that correspond to progress in science and technology, changes in society, and the lives and development of children. While remaining in line with the curriculum determined by the national government, the lessons in the curriculum should be designed, implemented, reflected upon and assessed by teachers in accordance with the actual state of the pupils, and a cycle should emerge whereby the results are fed back into the design of future lessons. The pages should be arranged and structured with reference to the pages shown in the handbook. When doing this, efforts should be made to ensure the content being taught to the pupils is well rounded and that the children are able to sense the progress of a narrative when they receive lessons, giving consideration to continuity between one lesson and the next.

With reference to the following examples of annual planning, lessons should be arranged in such a way that pupils are able to enjoy studying the content that they need.

II Dietary life	I Family and	18 2(1) Fabric, textile	27 3(1) Disasters and
	family life	thread and fibers	the house
1 1(1) Our growth and	10 1(1) Present	19 2(2)	28 6(1) Looking at the
nutrition	lifestyle	Identification of fibers	community from the
			lifestyle perspective
2 2(1) The roles of	11 1(1) Family and	20 $4(1)$ Sewing tools	VConsumer life
meals	those around me who	and how to handle	
	support my life	them	
3 1(2) Functions of	12 1(3) Household	21 4(2) Hand-sewing	29 1(2) Living
nutrients	tasks and	methods	necessities and services
	responsibilities that		
	support life		
4 1(3) Understand the	13 3 (4) Physical and	22 4(3) Making a	30 2(2)Sales and
"Guide to Balanced	mental development	small handicraft	payment methods
Japanese Meals"	of the child and the	through hand sewing	
	role of parents		
5 3(2) Purpose of	14 3(5) Raising a	23 5(7) Ways of	31 3(3)Family budget
food preparation	child and	changing clothes	and shopping
	commitment of the		
	local community		
6 3(4) Appropriate	IIIClothing life	IVDwelling Life	f 32 4(1)Shopping and
management of			the environment,
cooking tools			shopping and society
7 4(2) Non-heat	15 1 (1)Functions of	24 1(1)The climate	33 4(3)The five
cooking (washing	clothes	and the house	responsibilities of the
and mixing)		(2)The functions of the	consumer
		house	
8 4(2) Heat cooking -	16 1(2)Functions for	25 2(1) Sun exposure	34 4(3)The five
1 (water-based)	health and sanitation	and daylight	responsibilities of the
	1)Clothes for hot or		consumer
	cold weather		
9 5(2)Fresh food and	17 2)Protect the body	26 2(2)Airflow and	35 3(1)Using lifestyle
processed food	trom injuries and keep	ventilation, noise	information
	the skin clean	ISSUES	

Examples of use of the home economics handbook 45 minute class/week \times 35weeks = 35 classes

Educational Models of Each Area



I. Family and family life

This chapter aims to provide an understanding of the human being, especially with regards to clothing, food and housing. In a home, human beings (the family) carry out their lives with respect to many different things and matters.

In order to study about such families and family life, students will start by thinking about their own lives and families, as well as understanding themselves. This will be taught in 5th and 6th grade at elementary school.

In secondary education, the range of study broadens from the self to the family. Students will especially learn about the parent as their future self, and the child they will have. Meditating on their future selves from the perspective of their present selves and looking back at their pasts can also lead them to consider the future.

Such education regarding the family, as well as the thinking regarding future paths and parenthood may link them to professions and higher education in related fields. For example, students might choose a job relating to child care; receive higher education and become a teacher at kindergarten or nursing school; choose a job or pursue higher education in welfare. For that purpose, learning about the family and family life will be significant.

The educational model by this book was created for developing countries and allows one to develop a sense of respect and protection for human rights while learning about family and family life. Human rights must be respected in all circumstances, though this is not always the case. Through the study of family laws, we expect to raise awareness for human rights and to encourage healthy development in body and mind.

< Elementary education >

This section is meant to be studied by senior students at elementary school. Students will start by reflecting on themselves. The teacher will provide pictures for discussion on family/school life and the relationship to society in order for the students to understand the relationship between the self and the family.

<Secondary education>

The study consists of life-plan making, from daily time management and time allocation to the future lifestyle. Opportunities will be provided for the students to examine and think about their lives by making pictures and diagrams, which may lead to a consideration of future lifestyles and family. The teacher should encourage discussions among students on their future visions of home and family, and develop their child-raising skills through an understanding of the process of child growth and development by various photographs, audiovisual materials and documents within the learning process. Finally, an awareness will also be developed towards freedom and equality based on related laws and regulations.

1. Self-growth and family	(1) Present lifestyle	1hour

Look at one's present lifestyle and think about one's roles in order to understand that the family members base family life on the cooperation.

 $\textbf{Keywords:} \ self, \ family, \ cooperation, \ role$

Contents

1. Learn about the families around the world.

Provide students with picture books, annual records or photo albums (with family subject) and start a discussion about the family: what it should be and what it appears to be. Students will understand there are various types of families.



2. Discuss about the lifestyles of family members.

Encourage students to recall their daily life and make a picture of frequently practiced, favorite or important activities.

- Each students will present reasons on why these activities are important, why they practice so often.
- \cdot Students should notice through the lifestyles of their father or mother that the parents have various work to do.
- They should realize they must also help their parents.



3. Discuss one's roles.

- They support the family through emotional means or physical labor.
- $\boldsymbol{\cdot}$ They need to study and develop physical strength for the future.

1. Self-growth and family	(2) Family and those around me who support my life	1hour			
Objective Students should understand and appreciate the many people to whom their growth has depended upon.					
Keywords: Family, growth, care					
 Contents 1. Encourage students to recall the major events of their life, from their birth until today. They are to make a presentation of these events of life until now (elementary school) through pictures or a paper doll theater. The students should ask about their early childhood lives to their families. 					
 2. Understand child growth processes through video or slide projections. *Changes in height and weight. (Use maternity records if possible.) *Changes in size and form of the clothing. *Changes in types and amount of food. *Changes in play and friends. 					
3. Discuss what their parents have done for their growth.					
Students should notice that their parents have committed to a lot of things for their growth: Food preparation and services, recreation, bath and toilet assistance, sports and play, treatment for illness and injury, music or art appreciation (paintings, TV, movies), reading, travel, study, handing down of folk tales and playing, crafts etc.					
 4. Have students acknowledge that their growth comes from the support by various people. *Students should notice that they have been supported in various ways by people in the neighborhood or local community, relatives, staffs of nursing school or kindergarten, and city/town halls. *Discussion on specific cases might be useful. 					

1. Self-growth and family	(3)	Household	tasks	and	responsibilities	that	11
	sup	port life					Inour

Understand that family life is supported by doing various household tasks and to develop the attitude to share and contribute.

Keywords: Family life, household tasks (labor), share, cooperation

Contents

- 1. Look up the types of household tasks in family life.
 - Students should think about specific activities regarding clothing, food and housing.

For example, the teacher may encourage them to reenact house duties through paper doll plays of the daily activities. They should recall all activities from morning to night.



2. Students are required to recall their own situation, and discuss the people in charge of the household labors.

*Examples of discussion topics.

- Their responsibilities. Even elderly person and little child do their duties.
- The family has a lot of duties. There are difficult tasks and easy tasks.
- Family members help each other. It is natural to work.
- Gender bias in the responsibilities and volume of the household duties. Is there any person who has a disproportionate amount of responsibilities?

3. Each student presents his or her own responsibilities in the housework, as well as methods and tips.

- *Examples of presentation
- Precautions in housework.
- Method, procedure and timing.
- Benefits of household duties.
- \cdot The difficulties.
- \cdot Feedback from the family members.
- 4. Find better ways to do one's duties.
 - Students should consider where to improve and how to make it better.

For example, they should think about how to avoid wasting time, how to work more conveniently with tools.

2. My life plan (1) Daily time-management and time allocation 2 hour	S
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Discuss how everybody spends their day in order to develop efficient time management skill **Keyword:** Time management

Contents

1. Encourage group discussion about daily activities through pictorial presentations.

• Students will be divided into small groups, each in charge of early morning, morning hours, afternoon and night hours.



2. Using the pictures made by all the students, put together the entire day's activities. The teacher is to encourage them to discover their own ways of time management.

- · Which activities are in your life, and which aren't?
- Which activities are common for all families?
- Are there any inactive times?
- Fill in the activity table with the appropriate times.



3. Let the students realize that a day is divided into times for free time, time to rest, and time to study.

- The rest and the study activities are in common.
- The individual character comes out during free time.
- During free time, many students actively participate in housework activities.
- Is there any time being wasted?

 \cdot A sense of moral responsibility is needed for life. Each student must consider their own way of time management.

2. My life plan	(2) Present and future lifestyle	2 hours
	1	

Develop motivation and mental attitude towards the future through the process of speculation on the future based on the present state of life and recognition of what is necessary. **Keywords:** the future self, profession, schoolwork

Contents

Discuss about dreams for the future and what is necessary to make them happen. Students will realize there are various professions: kindergarten or nursing school teacher, doctor, nurse, astronaut, scientist, minister, pilot, travel operator, florist, designer, shop assistant at a confectionery or a bookstore, athlete, musician, actor or entertainer, IT business, toy shop, hairdresser, architect, interpreter...

- Some of the jobs require certification, while others don't.
- What are the jobs that require certification?
- $\boldsymbol{\cdot}$ There is less gender distinction between jobs than in the past.
- There is a wider variety of profession for which everyone can do
- There is less distinction between sexes.



2. Students will discuss about what they have to do now and what they will have to do for their future professions.

- In order to become qualified, they will need to study at a university or professional school →What kind of school should they go to for their future professions?
- In order to attend university, they have to study at junior high school and high school.
- Financial resources are also required \rightarrow With a little ingenuity, they can pave the way ahead; students can obtain funds themselves, or be helped by parents or government.
- They need help from family, but self-motivation is more important.

3. Students must have a vision in order to realize their dreams.

- For example, in order to become a teacher they will need certification. That certification requires 4 years of university study. To be a designer, they will need to study at design school.
- They must figure out how to fulfill their goals.

3. Child development and (1) Infancy and early childhood the role of parents 1hour
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Understand the general aspects of the life of the infant and toddler by age. **Keywords:** infant, toddler, daily living

Contents

1. While watching a video clip showing the daily aspects of the lives of infants and toddlers, students are required to find the differences with their own lifestyles and take notes.

- Students should acquire a broader understanding of the life of children: notice the differences by age in the types of activities, meals, change of clothes, plays, napping and toilet training.
- Are male and female differences reflected in these lifestyle aspects?



- 2. Encourage group presentations on these differences by age.
 - Students should notice the differences in ability level by age.
 - Consider the differences in accuracy level and precision in handicraft and physical exercises.
 - \cdot Are there differences in the types of play by age?

3. Sum up the characteristics of infancy and early childhood behavior.

Examples: Infant

Their life consists of sleep. Length of sleep changes gradually. Frequent laughing and crying, flapping arms and legs, sucking fingers, They bring anything they can touch to their mouth...

Early childhood

They love playing, they are very active, they love mud and dirt. Awkward running style in younger children gradually improves. They seem interested in making things...

3. Child development and	(2) Physical/mental development in infancy and	-1
the role of parents	early childhood	lhour

Understand the relationship between age and physical/mental development, as well as the processes of development.

Keywords: Physical and emotional changes, development

Contents

1. Encourage the students to recall what they learned during the previous session. Focus on the aspects of mental and physical development in infants and preschool children, and start a discussion about these aspects.

- \cdot Mental development should be noticeable from verbal and emotional expressions.
- Provide students with pictures of infants and preschool children in order to show how the expressions of anger, sorrow and joy change according to age.



2. Check weight and height records to understand the conditions of physical changes.

- Check the maternity records to comprehend the processes of physical development.
- Confirm weight and height growth rate by age.
- Refer to the statistical data of your own country.



3. Summarize the processes of physical and mental development. (See Document section).

- When the weight and height at birth will double?
- When are emotions clearly expressed?

3. Child development and	(3) Relationship between play and the growth in	-1
the role of parents	infancy and early childhood	lhour

Understand age-specific characteristics of child play, as well as its necessity for child growth. **Keywords:** play and growth

Contents

1. Encourage the students to recall playing in early childhood, and to make various lists of how they played.

- With whom were they playing? How did they play?
 - For example, Infants: Infants spend most of their time asleep. Activities such as looking at moving objects and trying to grab them while half-asleep are not considered as playing.
 - Early childhood: Children with older brothers or sisters play by imitating them. Pitching balls (rolling, throwing),
 - Running (still unsteady or gradually getting faster),
 - Playing with tools, moving actively, making objects, etc.

2. Categorize these various ways of playing by age and summarize the age-specific characteristics of child play.

Child play

sensory play	rattle teething ring
motor play	slide swing tricycle
imitation play	make-believe play
acceptance play	picture book television picture-story show
makeup play compose play	clay
	toy block paper craft sand play

3. Child development and	(4) Physical and mental development of the child	-1
the role of parents	and the role of parents	lhour

Understand the role of parents and family for healthy development of the child. **Keywords:** development, roles of parents, physical and mental development

Contents

- 1. Open a discussion: who are in charge of raising a child?
 - Parents (mother and father), grandparents, adult neighbors, brothers and sisters...
 - Students should notice that so many people are involved: nursing school staff, administration staff...



2. What happens to the child who is not being taken care of? Encourage group discussion and presentations on negative effects.

• Students should consider both their own standpoint and those of others.

Insufficient physical development

Malnourishment preventing body growth, tendency towards sickness,

not being taken care of when hurt, etc.

Emotional deprivation

Sadness, neglect, loneliness, insecurity from being unable to trust anyone, depression... etc.

3. Students are required to have their own vision of parenthood and to make a presentation of their future stance towards their children.

- What will they do if there is not enough time to spend with the children?
- Various situations should be considered (holidays, vacations, weekdays)
- 4. Summarize the roles of parents when raising a child.
 - The roles of parents are very important to both physical and mental development of the child. As examples, the parents must facilitate communication, give care as appropriate to the child's age, and exert measures for encouraging the child to become self-reliant.

3. Child development and	(5) Raising a child and commitment of the local	1hour
the role of parents	community	mour
Objectives		
Understand the necessity	of the commitment by family, society and local of	community in
collaborating to raise a child.		
Keywords: community, society,	childcare support	
1. Discuss about the troubles f	amilies have when raising children.	
 Students should ask the 	ir family in advance what kind of problems there we	re (are.)
Great concern (the child	doesn't eat or sleep, keeps crying)	
Not knowing what to do	because the child's fever kept coming back	
The child has problems	playing with friends, they often make him (her) cry, e	tc.
• Discuss how to solve the	ese problems	
Ask an experienced pers	son	
Need for a place where t	they can be consulted	
Child-suppor	t institutions and town/city halls	
Newspaper a	dvice columns, radio, TV or internet could be useful	
Nursing scho	ol or public health center etc	
*Regional conditions sho	ould be taken into account	
*Introduce cases in Jan	an	

2. Look up places where count	seling on raising children can be received at the tow	n/city hall (or
similar public facility) and pre	sent the results.	
For example, a childcare sup	pport map can be made and presented.	
C	hildren-support map	
School Children's hous	nursery school,	
	kindergarten © © welfare facilities Government A	
After School Program	n control tor children	
(friends)	Lhealthcare center	
	family Government B	
religion		

3. Summarize the measures for childcare support and emphasize the importance on gaining the cooperation of the society and local community.

work

nongovernmental activity

NPO activity

Government C

Government D

http://www.naruto·u.ac.jp/~home/mate/pdf/m_no2_1_8·2.pdf

While circumstances vary among countries, the overall positions of both society and country as childcare supporters remain the same.

4. Family and society	(1) Child health and medical examination	41
supporting the human being		lhour

Regular medical examination is required to maintain our physical health. **Keywords:** medical examination, immunization

1. Students are to recall the past medical examinations of their early childhoods and to make presentations on them.

- $\boldsymbol{\cdot}$ Encourage them to recall how old they were and what happened at the examination.
- \cdot Ask if they have been immunized before.
- If not, the teacher can introduce cases in Japan (audio-visual material can also be used).
- 2. Discuss the importance and necessity of medical examinations.
 - Children require extra care because of less immunity and higher rate of disease progression than adults. Medical examinations are also important in enabling early detection and treatment of disease.

 \cdot Students should understand the necessity of medical check-ups, health control, and health promotion measures.

3. Look up the schedule for medical examinations.

 $\boldsymbol{\cdot}$ Newborn children, child born within one month, 3 to 4 month child etc.

 \cdot Annual medical examination is scheduled at school.



4. Discuss how to use medical examination results.

- $\boldsymbol{\cdot}$ Prevention of disease and early treatment.
- Understand one's growth process for improving diet, etc.
- 5. Review and outline one's health control measures.

Do not skip meals, eat nutritionally balanced meals, build up physical strength... etc.

4. Family and society	(2) Convention on the Rights of the Child and	
supporting the human being	the children's charter	lhour

Find out about Convention on the Rights of the Child, and understand its principal concepts as well as the roles and actions it requires.

Keyword: Convention on the Rights of the Child

Contents

1. Discuss the Convention on the Rights of the Child: Have you heard of it, what is it about?

2. Learn about the contents of *Convention on the Rights of the Child.* $E_{\text{rescale}} = \frac{1}{2} \left(A_{\text{rescale}} + A_{\text{r$

Example (Article 2-1, 2-2) "States Parties shall respect and ensu

"States Parties shall respect and ensure the rights set forth in the present Convention to each child within their jurisdiction without discrimination of any kind, irrespective of the child's or his or her parent's or legal guardian's race, color, sex, language, religion, political or other opinion, national, ethnic or social origin, property, disability, birth or other status."

"States Parties shall take all appropriate measures to ensure that the child is protected against all forms of discrimination or punishment on the basis of the status, activities, expressed opinions, or beliefs of the child's parents, legal guardians, or family members."

Interdiction of discrimination, right to life, survival and development, right to a legally registered name and a nationality, right to know and to be cared for by their parents, freedom to express opinions, freedom of information, protection of privacy, communication and dignity, protection from all forms of child abuse, neglect and exploitation, right to primary health care, right to education...etc.

• Adopted by United Nations in 1989 and signed by 192 countries and regions (July 2003), the *Convention on the Rights of the Child* is a international treaty that specifies the protection of fundamental human rights of children in many areas:

3. Students are required to look at their own lives and discuss questions regarding the protection of fundamental human rights, and the specifications of the Convention.

- Think about the matters being guaranteed to children all aver the world and the state of the present world.
- $\boldsymbol{\cdot}$ Discuss matters which are or are not being sufficiently addressed by the Convention.

4. Find out if your country has any laws for protecting children.

Despite regulations such as the children's charter and the child abuse prevention law, tragic events happen and there are actions being undertaken to protect them in Japan. Students should refer to this as they consider the situations in their own country.

4. Family and society	(3) Physical, mental and lifestyle changes with	41
supporting the human being	aging	lhour

Understand elderly people as well as their physical, mental and lifestyle conditions. **Keywords:** elderly person, lifestyle change

Contents

1. Think about the elderly person: Are there any elderly persons around you? Who are the elderly people?

• How old are they? (Japanese cases may be introduced.)

2. Based on pictures or personal experiences, discuss the characteristics of elderly persons.

- Physical aspects: decreased physical performance and walking speed, need for walking stick, tendency to fall, increased curvature of the spine, need for a handrail, expertise in certain areas… etc.
- Mental aspects: memory loss, increased memory for past events, stubbornness, gentleness, thoughtfulness...etc.

Students should keep in mind there are positive and negative sides in aging and everybody is going to be old. If possible, describe some "aging experiences" in order for students to realize the physical burdens. (For example, have the students walk up stairs with something heavy around their waists.)

3. Discuss how to lead a productive life, taking into account the physical and mental conditions of elderly people.

• Students are required to imagine their future as an elderly person:

Where will they be, who will they be with and what will they do?

- What is required to lead a productive life?
- What should they do right now and afterwards?

4. Look at videos and pictures of other countries showing facilities for elderly people to discuss how residences and towns can accommodate elderly people, and what the students can do around them.

> group housing for elderly (Sweden)



4. Family and society	(4) Utilization of welfare and independent	-1
supporting the human being	living	lhour

Students are to realize that various support and welfare services are available for enabling elderly people to live independently.

Keywords: elderly person, welfare, independence

Contents

1. Provide students with pictures of group housing for elderly (Sweden) and senior care facilities (Japan), and start a discussion on why these facilities are built.

group housing for elderly (Sweden)

inside housing



2. Learn about the necessity for care facilities and home care equipment and realize the importance of welfare services.

- Interaction with the community and other people bring dynamism to life.
- It also brings motivation to life.
- These supports enable independent living for elderly people.
- A sense of fellowship can be built...etc.

3. Check the formulation and implementation of welfare policy of your country.

- For example, elderly care insurance system, the Elderly Welfare Law, and the Law of Medical Care for Elderly are being implemented in Japan.
- Check the welfare services of your country.

4. Learn about the United Nation's Principles for Older Persons.

This is an international commitment that specifies five principle-clusters:

Independence, Participation, Care, Self-fulfillment and Dignity.

It is recommended for each country to implement these principles into their own measures for action.



II. Dietary life

In this chapter, students are to be aware of daily meals, learn about balanced meal-taking, nutrition and meals. They are also to learn about the choice of foodstuff and cooking basics for daily meals, and practice cooking in using commonly used foodstuffs. In applied education, students will acquire the knowledge and skills about nutrition, foodstuff and cooking as well as the ability to manage a productive dietary life.

- 1. Health and nutrition
- 2. Human being and food
- 3. Meal planning
- 4. Methods of cooking
- 5. Eating safe
- 1. Acquire basic knowledge and understanding about the types and functions of nutrients in association with the daily living.
- 2. Understand the roles that meals play in our life as well as the health and meals.
- 3. Daily requirement of foodstuffs for a healthy life; students are to be able to grasp an approximate amount of daily intake of foodstuff and develop the skills to plan daily menus.
- 4. Acquire the basic cooking skills and the ability to make an appropriate choice of foodstuff according to the purpose.
- 5. Acquire the skills for proper management of food products and cooking utensils in paying attention to the safety and sanitation of foods. In applied education, students learn about specific diets for patients, young children and elderly persons in order to develop the skills for planning menus and to cook properly according to the purpose or object.

<Teaching plan>

Understand the roles of meals play in our life and the relationship between health and meals, as well as scientific knowledge on food nutrients and their functions, and the characteristics of nutrition required for a glowing child. Students are to be able to discern food quality, to select foodstuffs according to the purpose, and develop the skills of basic cooking for daily meals. They are also required to develop the skills for proper management of food products and cooking utensils in paying attention to the safety and sanitation of foods.

<Applied teaching>

Learn about the status and issues of dietary life at home, understand the relationship between health and nutrition, and acquire the ability to make efforts in dietary life to improve and maintain their own health. Students are to understand the environmental transformation of our dietary life, food safety and sanitation issues, and acquire the skills to control their own dietary life in paying attention to health and safety.



1 Health and nutrition

Understand the roles that play meals in our life, the relationship between health and meals, and acquire basic knowledge about the types and functions of nutrients in association with daily meals.

(1) Types and functions of nutrients.

Teachers help students to understand the types, functions, and principles of metabolic processes of each nutrient (carbohydrate, fats, protein, minerals, vitamins), the relationship between the structure of human body and properties of food products, raise concern about the prevention of lifestyle diseases, and raise awareness on the importance of taking nutrition in just proportion.

(2) Nutritional characteristics for adolescent

Understand the physical and physiological characteristics of each life-stage and discuss about the nutritional requirements and food patterns suitable for each life-stage, in order to develop the ability and attitudes toward health promotion.

(3) Nutritional characteristics of foods

Students are to classify foods into the five food groups by their nutritional characteristics to understand the approximate amount of food intake and types of food products required for a healthy life of adolescent. Based on this experience, students are expected to make a deliberate planning of daily meal composition.

<Teaching plan>

Teachers help students to understand the role of meals in our life, the relationship between health and meals, scientific knowledge about the Five Nutrients and their characteristics, and the characteristics of nutritional requirements for students in growth period. Students are also to understand in the context of daily meals the types and amount of food products to take in to meet the nutritional needs of adolescent. The aim is to encourage students to develop the skills to organize meals and to take nutritionally balanced meals. Therefore, it is essential to classify foods into food groups by nutritional characteristics and to have a concrete grasp on the amount of daily food intake.

<Applied teaching>

Students are to learn about the status and issues of dietary life at home from the perspective of nutritional intake and food habits. They are to realize the importance of nutritional balance of meals in the efforts to provide health protection and health improvement for family members, and to understand the types and functions of nutrients, as well as the characteristics of nutritional requirements for each life-stage (young children, adolescent, adult, elderly person, women in pregnancy and in lactation). By noticing the difference in nutritional requirements according to age, gender, and intensity in daily activity, students are to understand how to interpret nutritional standards such as nutritional requirements.



- A marked increase in height and weight can be seen in childhood and juvenile subjects, while 16 and 17 years-old subjects show a gradual growth curve.
- A significant difference appears between boys and girls when they are twelve-years-old (height) and thirteen-years-old (weight).
- Girls have a shorter growth period than boys.
- 2. Nutrients that constitute the human body.



- Water constitutes two-thirds of the human body.
- Inside the body, the water mainly helps with the conveyance of nutritional substances, excretion of bodily wastes, and regulation of body temperature.
- Protein is chiefly stored in muscles, blood, skin and hair. Minerals are stored in teeth and bone, as well as in muscles.

1. Health and Nutrition	(2) Functions of nutrients	2hours		
Objectives Learn about the functions of nutrients and the intake of nutrition during childhood and adolescence. Understand the role that food plays in order to know the importance of eating healthy. Keywords: Carbohydrate, Fats (lipids), Protein, Minerals, Vitamins, the Five Nutrients 1. Learning about the roles that meals play				
 For example, Support and maintenance o Building and development of Activities for good health Development of human inte Pleasure from eating 	f a healthy life. of the body. raction.			
2. Learning about the func	ctions of nutrients.			
Become energy	Build the body structure Maintain bod Image: Construction of the structure Image: Construction of the structure	ily functions		
Carbohydrates Fats (lipids) Protein Minerals	Vitamins		

3. The functions of nutrients.

• Carbohydrates (Sugars and Cellulose) : Sugar is mostly digested by the human body and converted to the glucose. The glucose is then broken down from being transported by the bloodstream throughout the body and becomes energy. Cellulose (fiber) is neither absorbed nor digested, but normalizes intestinal functions.

• Fats (lipids) : Fats that have been broken down are an energy source. Fats are also stored underneath the skin and constitute body tissues.

• Protein: Protein makes up the body structure such as muscles, blood, visceral organs, skins, hairs. Animal protein contains essential balanced amino acids. It also serves as an energy source.

• Minerals: Calcium is essential for the formation of teeth and bones. It is also stored in muscles and helps out with muscle functions. Iron is an important component of blood and the lack of iron causes anemia.

• VITAMIN A is good for the eyes as well as the growth of human body. It also enhances bacterial resistance.

- VITAMIN B1. B2 assists in breaking down carbohydrates and fats into energy.
- NIACIN supports energy metabolism.
- VITAMINC accelerates healing of wounds.
- VITAMIN D strengthens teeth and bones.

The human being digests food inside the body, and uses the extracted nutrients. This process is called nutrition. Food nutrients are grouped into five families based on their functions and properties.

4 . Look at what we eat every day.

Discuss what is wrong with the lunch examples below, and think about how to improve them.







Hamburger and french fries

Instant noodles

Chips and soda

Problems: The meal contents indicate excessive intake of sugar, salt and oils.

Lack of ingredients such as eggs, fish, vegetable, fruits or potatoes. Improvements : Try to eat a well-balanced combination of foods, with the target

of approximately 30 kinds of foods.

Try not to eat too much food like hamburgers, French fries or Chinese noodles, and add some eggs, fish, vegetables, fruits or potatoes as side dish salads, garnishes or toppings.

Lifestyle diseases

General term of several diseases including high blood pressure, hyperlipemia, diabetes, brain disorders, myocardial infarction which are caused by lack of physical exercise, poorly balanced diet and stress.

1. Health and Nutrition	(3)	Understand	the	"Guide	to	Balanced	2hours	
	Jap	anese Meals"						

Learn about the *Guide to Balanced Japanese Meals* and understand the healthy and ideal balance for Japanese meals.

Keywords: *Guide to Balanced Japanese Meals*, staple food, main dish, side dishes, serving portion size

1. Understanding the Guide to Balanced Japanese Meals

A spinning top-shaped scheme is adopted in the *Guide to Balanced Japanese Meals.* The spinning top represents balanced composition of daily meals, the axis of the top stands for water requirement, and the spinning action of the top is equivalent to physical exercise. The illustration shows what and how much to eat in an easy-to-understand format.

Daily combination of dishes and approximate portion are indicated by each dish and food category, using the unit of "1 SV" (one serving size.)



2. Understanding the adequate amount of food intake.

Daily food portions depend on one's active (energy) level, which can be referred to by the SV indicated by each dish-group. Daily calorie requirements by age are as follows: $1800kcal \pm 200kcal$ for boys and girls 6 to 9 years old, $2200kcal \pm 200kcal$ for girls 10 to 17 years old, and $2600kcal \pm 200kcal$ for boys 10 to 17 years old. In the case of $2200kcal \pm 200kcal$, 5 to 7 SV for staple foods (carbohydrates), 5 to 6 SV for side dishes, 3 to 5 SV for main dishes, 2 SV for milk products and 2 SV for fruits should provided a balanced breakfast, lunch and dinner. The amounts of staple food and main dishes (ingredients and cooking methods) should be varied for a balanced meal.

Calories	Staple food	Side dish	Main dish	Milk products	Fruits
1600kcal	4~5	5~6	3~4	2	2
1800kcal	4~5	5~6	3~4	2	2
2000kcal	5 ~ 7	5~6	3~5	2	2
2200kcal	5 ~ 7	5~6	3~5	2	2
2400kcal	5 ~ 7	5~6	3~5	2	2
2600kcal	7~8	6 ~ 7	4~6	2~3	2~3
2800kcal	7~8	6~7	4~6	2~3	2~3

Measure of food intake by active level

Classification of target people

1600-1800kcal: Children of under 9 years-old,

women with low activity level, aged women. 2000-2400kcal: Most women, men with low activity level. aged men 2600-2800kcal: Most men over 12 years old

3. Calculate one's own daily food requirement and make a plan for dinner (1/3 of the daily requirement) containing staple foods, main dishes, and side dishes.



1.	Health and nutrition	(4) Amount of energy from food.	1hour

Understand the relationship between the food and energy, in order to know the sufficient amount and types of the food intake for children and adolescents to live healthily. Keywords: energy amount

1. What is energy?

Human life and activity require energy. The energy sources (nutrients) of the ingested food will break down the oxygen inhaled by the body through respiration, creating energy inside the human body, and excreting carbon dioxide and water as waste. A unit named "calorie" is used to quantify the amount of these energies. 1 kilo calorie (kcal) represents the amount of energy required to raise 1 liter of water 1 degree.

2. Students are required to find the energy amount of several food ingredients.

Food name	Portion size	Calories	Food name	Portion size	Calories
Rice	one serve(150g)	252	Chicken breast	one piece(50g)	95
Bread	60g	158	Chicken breast fillet	one piece(40g)	46
Potato	140g	106	Milk	200ml	134
Sugar	1 tablespoon(10g)	38	Roasted ham	one slice(15g)	29
Vegetable oil	1 tablespoon(14g)	129	Tomato	1 (160g)	30
Flour	1 tablespoon(8g)	29	Eggplant	1 (55g)	12
Egg	1(50g)	76	Carrot	1 (120g)	44
Sardine	1 (60g)	130	Spinach	100g	20
Flounder	1 (150g)	143	Lettuce	one head (320g)	38
Mackerel	one piece(70g)	141	Onion	1 (190g)	70
Round of beef	50g	123	Cucumber	1 (80g)	11
Pork flank	50g	193	Shitake	100g	18
Pork fillet	50g	58	Banana	one finger(100g)	86
Pork leg	50g	118	Apple	half(130g)	69
Chicken thigh	50g	100	Mandarin	1 (100g)	46

Calorie table for main foods

Estimated calorie requirement according to dietary reference

		Physical activity level	Daily activities					
							Low(I)	Sedentary life and static actibity for most of the time.
Age 6~7	Physi I -	Men ical activity II 1650	r level Ⅲ −	Phys I -	Women ical activity II 1450	/ level III -	Normal(II)	Mainly in seated positions at work, including some walking mobement within office and operations in standing position, or incuding actibities such as commuting, shopping, household duties, and light sports.
8~9 10~11 12~14 15~17 18~29	_ 2350 2350 2300	1950 2300 2650 2750 2650	2200 2550 2950 3150 3050	- 2050 1900 1750	1800 2150 2300 2200 2050	2000 2400 2600 2550 2350	High(Ⅲ)	A lot of walking mobement or operations in standing position at work, or actibe physical exercize(sports) in leisure time.

Students are required to determine the calories of their supper from the previous day as well as how much of their daily energy requirements were consumed, using the tables above.



2 Human beings and food

(1) The roles of meals

Students are to understand the reason for taking meals and how they should take them, as well as the importance of three regular meals a day. They will also consider the negative effects of not having a balanced diet and skipping meals.

(2) Food life and culture

Learn about the formation of local food culture and taste.

(1) The role of meal

< Elementary education >

Understand the importance of three meals a day in order to avoid skipping meals, as well as the importance of enjoying food and communication at mealtimes.

<Secondary education>

Understand when to take meals and what a balanced diet is (PFC and daily energy balance.) Students will also learn about unbalanced diets and skipping meals, as well as the psychological roles of meals.

(2) Food life and culture

<Secondary education>

Understand the relationship between climate and food culture, and learn about the formation of taste.



Scenery of table-manners training



Understand the importance of three regular meals a day.

Keywords: PFC balance, balanced meals

Students have learned about the reasons for taking meals (lifestyle sustenance, body growth, healthy activities, communication, pleasure from eating) in the previous chapter. In this chapter, they will learn when and how often to take meals.

- 1. Understand the importance of eating regularly.
- ① When to take meals?
 - \rightarrow Students will consider if they have fixed mealtimes, and what time they take meals.
- ② How many meals to take a day?
 →Students will consider how many meals they take in one day, and when they do not eat.
- 2 . What is an "ideal meal"?

 \rightarrow It is a matter of balance and not of amount.

On balance:

There are three types of balance: nutritional balance, daily balance (distribution), and taste balance (see chapter 3-1).

Students should understand the concept of nutrient (see Health and Nutrition chapter.) In order to consume the right amount of nutrients according to stage of growth, students should also understand the energy composition ratio of protein (P=15%), fats (F=25%), and carbohydrates (C=60%), and that a balanced meal contains an appropriate amount of vitamins, minerals and fibers. Energy insufficiency is compensated by snacks between meals. Unbalanced meals and meal skipping should be avoided.

Unbalanced meals mean eating a disproportionate amount of one ingredient (for example, rice or potatoes).

Meal skipping means taking only one or two meals per day (if there is no time to eat in the morning, drink cow or goat milk at least.)

Distribution of three meals must be based on the 1:1.5:1.5 balance (breakfast: lunch: supper.) For better taste balance, avoid using the same cooking and seasoning methods.

3. On the importance of meals

Growing children require much energy and they cannot consume a sufficient amount of energy in two meals a day. Meal skipping leads to the disturbance of digestive-absorption cycles, trouble in secreting digestive fluids, and homeostatic imbalance that could have a negative impact on their growth. Consideration is also given to mental health by eating together and communicating each other. Students will learn that the regular intake of food through three meals a day (breakfast at 7 or 8 A.M, lunch at 12-13 P.M, dinner at 7 or 8 P.M.) keeps the absorption-digestion cycle and hormonal secretion stable, and leads to good health (eating as much as they feel like or eating everything at once is not recommended.) They will also consider that any food remaining in the stomach after 9 P.M. stays unabsorbed during sleep, and understand the importance of regular meals three times a day.

2 Human beings and food	(2) Diet and culture	
2. Human beings and loou		1hour

Learn about the relationship between the local climate and diet.

Consider the factors that determine diet.

Keywords: Diet, formation of taste

Provide students with books and guidebooks to consider differences in diet with other countries.

1. Discuss the causes of differences in diet.

 \rightarrow Students will point out the factors that determine diet.

Types of agricultural products differ according to climate (see graphic below: rice = warm and rainy region, wheat = cool and dry, barley = cold. Potatoes and other cereals are also influenced by climate). Some countries have religious bans on certain foods (pork in Muslim, beef in Hinduism.) Students will acknowledge the various dietary habits around the world.



Distribution of staple foods around the world.

(This map shows how climate affects diet. Barley and wheat lie mainly in cold regions, rice is found in warm and rainy Asia. Tubers are cultivated in Pacific countries; corn in mid-American regions; potatoes in southern US areas; tubers, bananas and raw cereals in Africa.

2. Consider taste.

 \rightarrow Students will consider if they think all foods from other countries taste good.

Climate, gender, age, previous food habits and food experiences determine the difference in the sensation of good taste. (Fatty food is preferred in cold countries, men and young people prefer high-calorie food more than women and elderly persons.)

 $3\,.\,$ Consider one's diet based on the differences in diet between countries.

 \rightarrow Understand the differences in diet between one's home country and other countries. Realize that imitating the diet of another country should be avoided and learn how to improve the diet in one's country in an appropriate manner.



3 Meal planning

(1) Learn about daily menu planning and develop the skills to plan a menu.

(2) Understand the purposes and the importance of cooking. After choosing the appropriate cooking methods, create and execute a practice cooking plan.

(3) Understand the environmental-friendly methods of food preparation and disposal of food waste, and develop the skills to put them into action.

(1) Meal planning

<Secondary education>

Understand what a goal-oriented menu is and learn how to plan daily menus.

Develop the skills for planning menus in accordance with relevant cautionary measures.

(2) Purposes of cooking

<Elementary education>

Develop the skills of basic cooking through easy cooking methods.

<Secondary education>

Understand the purposes of cooking and develop the skills for making practice cooking plans.

Plan a simple menu, to be followed by reflection and evaluation.

(3) Food selection and disposal

< Elementary education >

Understand the methods of trash separation and become able to do it on one's own.

<Secondary education>

Understand the reasons for trash separation and develop a proactive stance towards trash separation. Students will also learn about environment-friendly methods such as "eco-cooking."



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З.	Meal	pla	nning

(1) Planning the menu

Objective

Learn about the meaning of menu and understand what it is.

Develop the skills to plan daily menus.

Keywords: meal plan, daily meal plan

1. Encourage students to present examples of menus they see on TV or through magazines, and to think about menu types.

- ① Daily menu (based on age, gender, workload): Daily meals
- ② Entertainment menu (entertaining dishes): Dishes for welcoming visitors
- ③ Celebration menu (special meals for lantern festival, Christmas, New Year's day, marriages or funerals.)
- ④ Special diet menu (meals for pregnancy or breastfeeding, special diet during disease treatment. See documents at the end of this guidebook).

The definition of "menu" is a list of dishes for one meal or one day that are to be consumed by one person in the order listed.

2. Discuss the requirements for making daily menus.

- ① Family members (age and gender)
- 2 Health conditions (dental problems or diseases)
- ③ Taste (preferences and habits of family members)

The menu should provide the right amount of nutrients while taking these factors into account. Thinking about budget is also important when planning what foods to purchase (such as foods in season.) Cooking time should also be considered.

3. Planning the menu

- ① Choosing the staple food: 40 or 50 % of daily energy amount are to be taken from rice, bread, and noodles.
- \downarrow
- 2 Choosing the main dish: The main dish should mostly comprise of products such as meat, fish, eggs, soybeans, ham and cheese, which are high in protein.
- \downarrow
- ③ Choosing the side dishes : The side dishes complement the nutritional deficiencies of the main dish with vegetables, potatoes or seaweeds. Two different side dishes are to be prepared, hot or cold.
- \downarrow
- ④ Choosing the soup or beverage: Soup or milk.

Make sure there are "five tastes" and "five colors" in the overall menu.

The Five tastes represent sweetness, saltiness, sourness, bitterness, and flavoring (such as MSG). The five colors stand for red, yellow, green, white and black.

 \downarrow

 \bigcirc Desert and fruits: For vitamin supplementation and eating satisfaction.

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З.	Meal	pla	nning

Understand the significance and purpose of food preparation, and develop the skills to make a practice cooking plan.

Keywords: purpose of food preparation, practice cooking plan

1 . The difference between food preparation and cooking.

Making a dish involves physical operations such as cutting, crushing and marinating, and chemical operations such as seasoning and heating. Food preparation is the complete process of preparing the ingredients, cooking and serving the dish. The purpose of food preparation is to improve the safety and shelf life of the food ingredients, or to make them easier to digest. Because the words cooking (English) and cuisine (French) both derive from coquere (Latin) meaning to heat, cooking means the heating of ingredients.

2. Understand the contents and procedures of the practice cooking plan

Before following the practice cooking plan, check for proper clothing, ingredient distribution and measurement tools, food preparation methods and time, and the time it takes from preparation until tasting and cleanup, in order to confirm the plan is reasonably achievable.

Before creating the practice cooking plan, evaluate the following: time distribution, materials to use, methods of obtaining the ingredients, tasting, reflection, cost calculation and finished dishes.

Planning : What dish to prepare.

 \downarrow Plan the menu (breakfast, lunch, supper, object and purpose.)

Preparation : Purchase, utensils, clothing preparation (from hygienic perspective.)

↓ Preparation of utensils (sterilized cutting board, knives, pan, spatula, ladle, cooking chopsticks, etc) and clothing (apron, sling, indoor shoes and towel.) (See audio-visual aids for hygienic precautions).

Cooking: Cooking, arrangement on dish and serving (table setting.)

- \downarrow Measuring and cooking operations (temperature and time.)
- Table setting (table linen, cutlery, chopsticks, tableware and table flowers.)

Tasting : Manner (table manners) : Do not offend others.

- \downarrow Conversation (subject should be pleasant, avoid the subjects that lead to conflict) **Cleanup**
- \downarrow Waste disposal (see Environment chapter). Use clean water.

Reflection and evaluation

Think about the procedure, taste, nutritional balance, and cost.

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Through the example of cooking fish, students will learn how to choose the most appropriate cooking method, and develop the skills to plan a menu. This subject is followed by Chapter 4 (Cooking Methods).

Keywords: various cooking and preparation methods, fish cooking

1. Look up the cooking methods of fish as main dish, and understand how cooking methods differ according to fish type.

Choice of fish and preparation method.

Fish types: Fish with white flesh, lean fish or blue-skinned fish with a more fishy smell. Cooking methods: Choice depends on the desired calorie amount.

- 2. Look up examples of cooking and preparation methods.
 - ① Raw: sliced raw fish. This method brings out the taste of fish. Should be avoided in warm seasons or in the country because the freshness of the fish is important. Calories stay the same after preparation.
 - ② Grilling: Grilled fish or barbecue. Cooking fish with direct fire removes excess oil, reducing the calorie amount and adding fragrant flavor to the fish.
 - ③ Simmering: Simmering the fish with bouillon, soy sauce, or miso paste. The fat runs into the broth, reducing the calorie amount of the dish. This method is suitable for children, elderly and sick people, as simmering softens the fibrous portions of the fish and makes it easier to digest. Miso covers the smell of the fish. It is preferable to simmer the fish with something strong, like ginger.
 - ④ Steaming: Steaming whitefish with wine and salt and adding sweet-and-sour sauce, julienne vegetable strips, or oil. Steaming reduces nutrient loss and removes excess oil. Although the calorie amount of the fish is reduced, the total amount of energy depends on the seasoning agent. Adding oil makes this a high calorie dish.
 - ⑤ Deep frying: Frying in tempura batter (fritter) or other batters. Fry the prepared fish and add marinade sauce (sweet-vinegar oil, for better keeping.) Batter coated fry is high in calories.
 - ⑥ Pan frying: Pan fry (crispy frying in Teflon-coated pan), sauté, fillet (dusting the fish with flour and pan fry with oil.) Flour-covered fried fish is high in calories. Cooking with less oil during pan-frying can reduce the calorie amount.



Examples of fish cooking (from left to right): 2 grilled fish, 6 fillet, 4 steamed whitefish

3. Meal planning	(4) Appropriate management of cooking tools /	1hour
	How to use knives and the gas stove	mour

Understand safe and hygienic methods of handling food ingredients and kitchen tools with regards to food preparation (see DVD).

Keywords: clothing preparation, knife, gas stove, ventilation

1. Discuss the reasons for wearing proper clothing by looking at pictures of chefs and cooking staff at school catering facilities.

 \rightarrow Students will realize they need an apron (or white coat), sling, and hand-towels.

Wearing proper clothing prevents contamination from the body or from ingredients. It is important to wash hands thoroughly.

2. Look up the handling methods of kitchen tools (cutting board, knives, kitchen cloth).

 \rightarrow Develop the skills to handle the kitchen tools with safety and sanitary precautions. Students are required to understand the hygienic handling methods for using cutting boards, knives and kitchen cloths, especially how to hold a knife. Cutting boards, knives and kitchen cloths are to be washed thoroughly with detergent, then sterilized with boiling water and put away after they have dried completely. (For 1 and 2, see DVD also.)

Proper handling of knives



Holding the knife



Correct



Dangerous

3. The proper handling methods for gas stoves.

- ① Turn on the main gas valve.
- 2 Place pot or frying pan on the gas stove (check stability of pot or pan.)
- ③ Turn on the ignition switch (check if the light is on)
- ④ Adjust the flame with control lever (stay near the fire after ignition.)
- 5 Cautionary measures
- Ventilation must be allowed by opening a window or turning on the ventilation fan.



high heat

maximum heat





medium heat The flame touches the bottom of the pot.

low heat minimum heat

- Do not put any inflammable objects near the gas stove.
- Do not wear loose clothing. If the gas stove is located near the window, look out for curtains.

3. Meal planning	(5) Food selection and disposal	1hour
	1	1 THOM

Understand how to purchase food ingredients, develop the skills to put them into practice, and learn about ecological cooking, which reduces wasteful use of resources and garbage.

Keywords: ecological cooking, wasteful use of resources, reducing the waste

- 1. How to choose ingredients.
 - ① When choosing ingredients, try to choose foods in season and foods stating production source --- foods in season are generally fresh and cheap. Off-season foods have either been artificially raised or cultivated, or imported which wastes energy, fertilizer, feedstuff, energy and transportation costs.
 - ② Choose products with less packaging materials, especially plastic. Paper packaging, plastic bags or containers with the food purchase end up in the garbage. During combustion, plastic discharges twice the amount of CO2 than paper combustion (see Environment chapter.)

2. Discuss ecological cooking.

Examples of ecological cooking include: reusing vegetable peels and green top: cooking rice with radish leaves, radish/carrot peels boiled in soy sauce and sugar, fried potato skins, soup made from outer cabbage leaves, sauté of outer leaves of lettuce, roasted celery twigs and leaves, broccolis or asparagus stalk sauté.



Efficient use of kitchen tools that save energy and time: having rice porridge after a pot dish, all-in-one dishes (like simmered meat and vegetables), fried rice...etc.

3. Reducing water pollution.

To avoid water pollution and to use less detergent, wipe grease off dishes with paper before washing. Use a solidifying agent for leftover oil, or soak the oil in papers and put them in the trash (do not pour oil down the drain.)

4. Learn about the trash separation

Classification of trash (in Japan) is as follows: burnable, non-burnable and recyclable (cardboard, papers, bottles, cans, plastic bottles.) Some efforts are also made in using microorganisms to break down organic waste and returning the dried and pulverized waste back to nature. Local regions (in Japan) may have different trash separation requirements.



4 Methods of cooking

In this chapter, students will learn about practical cooking methods

- (1) Non-heat cooking: Students will learn about important non-heat food preparation methods such as measuring, weighing, time measurement, washing (sanitation) and food cutting methods.
- (2) Water-based heat cooking: Learn about water based cooking methods such as boiling, stewing and steaming. Students will also learn about the soup stock and develop the skills to make a soup stock.
- (3) Oil and air-based heat cooking: Understand dry heat cooking methods such as grilling and frying..
- (4) Chemical and physical operations: Understand the general classification of cooking operations into chemical (infusing and diffusion of seasoning agents) and physical operations (chopping hard ingredients). Students will learn about the cooking basics and develop the skills to adapt them for various cooking operations.
- (1) Non-heat cooking (washing, mixing).
 - < Elementary education >

Basic knife-handling methods.

<Secondary education>

Understand the importance of precision in measuring and weighing, and learn the appropriate methods of cutting according to the nature of the food. Students will practice salad-making skills.

- (2) Heat cooking (water-based)
 - < Elementary education >

Develop the skills for basic soup stock.

<Secondary education>

Understand the characteristics of boiling, stewing and steaming, and acquire the skills for basic cooking operations. Students will also learn about various soup stocks and develop the skill to make a soup stock.

- (3) Heat cooking (oil and air based)
 - <Secondary education>

Understand the principles of dry heat cooking such as grilling and frying. Learn how to grill and fry with pan, and how to make basic pastries with the oven.

- (4) Chemical and physical operations
 - <Secondary education>

Understand the difference between chemical operations (seasoning agents and taste, infusion and diffusion of seasoning agents) and physical operations (crushing, grinding and whipping). Students are required to understand the significance of cooking and learn how to adapt them for their lifestyles.



4. Methods of cooking	(1) Non-heat cooking (washing and mixing)	1hour
011		

Understand the methods and purposes of non-thermal cooking.

Keywords: measuring, washing, immersion, cutting, defrosting

1. The first steps of cooking.

Measuring the weight and volume, temperature and time is essential in cooking. Use the platform scale or electric scale, measuring spoons or cup for volume, thermometer for temperature, and the clock-timer for time. Exact measurement enables an understanding of cooking in a reproducible fashion and helps beginners to cook without failure.









Platform scale Measuring spoon

Measuring cup Thermometer

Clock-timer

2. About the non-heat cooking methods.

① Washing

The purpose of washing is to remove sand and dust, agricultural chemicals and harmful microorganisms from the food ingredients. Prolonged washing causes water absorption and runoff of water-soluble vitamins.

2 Immersion

The operation of immersing food in water, salt water or vinegar water. Adding water to food helps swelling and softening of the food, salt removal or refinement, and infusion of seasoning agents.

③ Cutting

Cutting the food helps remove inedible parts, and makes food easier to consume by removing tough sections. This allows better infusion of seasoning and heat -conductivity, as well as giving a crunchy texture and an appetizing visual effect.





For better taste, home-frozen food or frozen products should be thawed in an appropriate manner according to the nature of the product.

Vegetables (mixed vegetables); Do not defrost. Put them directly into the pan or into cooking liquid.

Satoimo (type of Japanese potato): Reduce the amount of cooking liquid to 1/2 if frozen glaze is present.

Pumpkin: Reduce the cooking time to 1/3 the usual time (frozen pumpkin is usually precooked.)

Meat and seafood: Slow defrosting at low temperature (in the refrigerator).

Frozen vegetables for commercial use (spinach, etc.): Thawing is to be undertaken in two steps. First, put them under running water to break the frozen bulk into smaller portions, then place these portions into hot water for rapid thawing.

③ Salads

Cut the prepared foodstuff or ready-to-eat ingredients (cucumber, Japanese radish, green vegetable) and add seasoning. Salads can be topped with the following: Salad dressing (proportion of oil to vinegar is 3 to 1), mayonnaise (with egg, vinegar, oil and mustard), or Japanese-style sauces (tofu and miso paste for a white tofu sauce, grated sesame seeds and vinegar for a sesame vinegar sauce, and sugar, vinegar, salt (1:1:0.2) for sweet vinegar sauce.



Example: Carrot and Japanese radish salad (Japanese dish)

4. Methods of cooking	(2) Heat cooking - 1	(water-based)	1hour		
 Objectives Understand the principles of water-based moist heating methods (boiling, stewing, steaming). Keywords: moist heating, boiling, stewing, steaming 					
1. About the moist heating m Water based heating is co Heat is transferred to the f	 About the moist heating methods. Water based heating is conducted at 100 degrees Celsius, 110 to 115 degrees if pressurized. Heat is transferred to the food through convection and conduction. 				
 Soup stock preparation (for Soup stock is the basis of co Students will consider the base, vegetable base). Example : Dashi (Japanese state) 	r soups and stews). (Se poking and can be used soup stock used in thei soup stock)	e DVD) in various dishes. r own country (animal bone bas	e, meat or fish		
Dried kelp II	nmerse in water	Remove the kelp and add dried bonito flakes	Filter		
3. Boiling This operation cooks food in Characteristics: softening enzyme deactivation, remo change, water absorption o Examples: boiling green ve	 3. Boiling This operation cooks food in a sufficient amount of water. Characteristics: softening the food structure, gelatinization of starch, protein coagulation, enzyme deactivation, removal of the bad parts or unpleasant odors, color retention or color change, water absorption or removal of water, sterilization. Examples: boiling green vegetables, noodles or squid; blanching; quick boiling, etc. 				
- ¹ 22 →	Contraction of the second seco				
Cut the ingredient in pieces	Boil them in salted wa	ater Cool them in cold w (to remove scur	vater n)		

4. Simmering.

 \rightarrow This is the method of heating ingredients in boiling cooking liquid.

Characteristics: Seasoning is done while cooking. Combination of various ingredients enables a harmony of tastes. Food can be kept for a long time on a fixed temperature.

Examples: Simmered foods, stews, one-pot dishes.



5. Steaming.

Steaming is a cooking method which uses the convection and conduction of water vapor to cook food (85 \sim 100°C).

Characteristics : Ingredients with less water content tend to absorb water, and ingredients containing high moisture content release water. Steaming operation softens the texture of fatty meat or fish, and reduces fat excess.

Examples: Steamed rice, vegetable, fish, or Chinese dumplings. Fatty pork may be steamed to remove fat for pork stew.



Steaming Chinese dumplings



Steaming pork

4. Methods of cooking	(3) Heat cooking-2 (oil and air based)	1hour

Understand the principles of the air-based dry-heat method (grill and fry). **Keywords:** grill, fry

1. Methods of dry-heat cooking: What kinds of cooking methods do not use water?

Dry-heat cooking is method of cooking without the need to water. The cooking temperature is higher than moist-heat cooking $(130 \sim 280^{\circ}C)$. Metal (frying pan, iron plate), oil (to fry), or air (oven) are common media for transferring heat. The heat is transferred through conduction, convection and radiation.

2. What are the types of grilling methods?

Grilling operations have <u>direct</u> and <u>indirect</u> methods.

- <u>Direct grill</u> : The charcoal grill has higher surface temperatures, and much of the heat is obtained through infrared and far-infrared radiations conducted through its large radiation surface. Gas flame however, has a smaller amount of radiation heat and its heat can only be applied partially to the food. Food in the gas grill is heated through the radiated heat from the grate heated by the gas flame. Examples: spit-grill, roast grill.
- <u>Indirect grill</u> : Cooking food on a metal plate such as iron plate or frying pan. Heat is transferred by conductivity. Because the heat is applied only to the surface of the food, there is a great difference between the surface temperature the internal temperature. Examples: hot plate roast, pan roast.
- Oven grill : To cook food by heated air. Classified as indirect grill, this method includes some element of steaming. Heat is transferred by convection and radiation, as well as heat conduction through the iron plate.







Pan-grill

Oven-grill

Frying

3. What is the deep fry cooking?

This is a oil-based dry-heat cooking method. Heat is transferred to the food by convection through the oil.

- Characteristics : High temperature short time heating with easy temperature control, and less food degradation compared to grilling operations. The moisture of the food and cooking oil are exchanged during the frying operation.
- Note : The short period of heating requires an appropriate choice of food ingredients, and ingredients may be limited due to size and shape.
 - Oil heats faster than water due to short heat capacity. The amount of heat capacity is the specific heat times the volume. Use a heavy pan (large mass) and do not put in too many ingredients at the same time.

Example: French fries

4. Methods of cooking (4) Chemical	l and physical operations
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Understand the principles of chemical and physical operations in cooking.

Keywords: dressing, jellification, crushing, whipping

What are some other cooking operations besides heat cooking?

1. What are the chemical operations in cooking?

- ①Seasoning→Penetration and diffusion of the seasoning agents (to add salt, sugar, vinegar, or flavoring.)
 - Basic tastes: Sweetness is obtained from the sugars such as sucrose, glucose and fructose. Sourness is from organic acids (citric acid, tartaric acid, malic acid, succinate, lactic acid, L-ascorbic acid, acetic acid, gluconic acid), saltiness from NaCl, bitterness from caffeine and alkaloid, and flavoring taste from glutamic acid, inocinic acid, guanylic acid, succinate. Seasoning is done through the penetration and diffusion of these substances.

②Changing pH values (acidification):

To encourage protein coagulation at the isoelectric point.

③Adding salts: Coagulation (Na+ for steamed egg pudding, milk Ca2+ for custard pudding), dissolving (the dissolving of fish myosin, the miofibrillar protein in fish, and its re-structuring with actin are two steps in the making of fish cake (Japanese food)).

④Osmotic pressure:

To make salted pickles, immerse vegetables into the two percent salted water.

2. What are the physical operations in cooking?

Cooking operations such as washing, cutting, grounding and stirring do not change the composition of the ingredients, but these operations alter their physical forms and textures in the mouth (textures felt during eating).

Examples : dressing, jellification, grinding, crushing (sesame), stirring, whipping (egg white)



Grounding (sesame)

Whipping (egg white)

- ①**Cutting** : Cutting away tough sections of vegetables or meat with knife, inserting half-cuts for cooking or easy serving purposes、chamfering (rounding out cut edges.)
- **②Grinding** : Grinding rice grain or wheat to make rice powder or flour.
- ③**Crushing** : Grounding hard ingredients (sesame) or hard parts of food (meat parts) to obtain smaller pieces.
- ④**Stirring** : Whipping the egg white (or whole egg) to fluff it for cooking purposes (sponge cake.)



5 Eating safe

Understand the environmental changes in dietary life as well as the hygiene and safety of dietary life in order to manage a healthy and secure dietary life.

(1) Choice of food products

This section aims to help students to deal with the diversification of food products and dietary habits, to acquire specialized knowledge about food products, and to develop the skills and ability to make a proper choice among various food products and to put the knowledge into practice.

(2) Food preservation

Understand about food decomposition and deterioration, food poisoning, food additives in order to maintain a secure and hygienic dietary life.

(3) Proper control of food products and cooking utensils

Learn about secure and hygienic handling of food products and cooking utensils in association with cooking practices. Students are expected to adapt the contents learned here into daily practice (proper disposal of waste, cleaning of facility...etc.).

<Teaching plan>

Students are expected to discern the quality of common food products in order to make a proper choice according to the purpose. To make a proper choice of food products, they are to understand the importance of conditions such as purpose, nutritional value, prices, cooking efficiency, impact on environment.

Fresh food products; students are to be able to check the quality of fish, meat, vegetable and eggs by freshness, quality and sanitation.

Processed food products; through familiar examples provided, students learn to pay attention to various food labels showing information on ingredients, food additives, nutrition table, expiration date, quality preservation period..., and develop the skills to choose products properly.

<Applied teaching>

Acquire the knowledge and skills about the food classification and its characteristics, food processing and storage in order to develop the ability and attitude for a proper use of food and to improve the dietary life.

- ① Understand about nutritional characteristics of food ingredients , cooking properties and use of food products in using food composition table.
- ② Understand about the food processing; purposes, processing methods, and property change.
- ③ Understand the principles and characteristics of secure methods of storage.
- (4) Understand about the diversification of food production, food self-sufficiency status and food distribution.

5. Eating safe	(1) Fresh food and processed food	1hour
Objectives		

Discern the differences in food quality in order to make the right choice.

Keywords: Fresh food, Processed food, Food additives, Food labeling • Quality labels

1. What are fresh foods?

Fresh foods are the non-processed vegetables, fruits, seafood or meat kept fresh from the time of its shipment. Each fresh food has its season, and the in-season foods are generally delicious, highly nutritive and inexpensive.

Criteria for fresh foods

 Freshness · Season · Local availability · Proper and minimal packaging Choosing points



Color and luster firmness, fresh



Clearness of the eyes redness of the gills firmness



firmness vividness of color no bad smell



Porousness of the shell weight

- 2. CRITERIA FOR PROCESSED FOODS
- Check the freshness date and expiration date.
- Check that the container or package is not damaged.
- Check how to store the product.
- Check that the product has quality label
- Check that the product contains zero or minimum amount of food additives.

Example of food-labeling

r	
	Pork sausage
	Pork,salt,artificial
Ingredients	proteins,sugar,spices,phosphori
	c asid solt seasonings
Weight	140g
Best before end	20XX.01.01
Storage	in Refrigerator
Manufacturer	OOCompany,
	XXXmachiO—

Some marks on food labeling

Food with health claims Mark



JAS Mark



5. Eating safe	(2) Food preservation	1hour
		1110 al

Understanding food decomposition and deterioration, food poisoning and food additives for a safe and sanitary dietary life.

Keywords: food degradation, freezing and refrigeration, preservation methods.

1. Food storage methods

Quality and freshness of food supplies must be verified at the moment of purchase. Fresh food products should be stocked in an appropriate place with ideal conditions for best use. Food decomposition and deterioration must be taken into account when preserving foods. Causes of food deterioration include enzymes, microorganisms, physical or chemical action, and pests.

To prevent these damages, various preservation methods are adopted such as freezing (under-20°C), refrigeration ($10^{\circ}C \sim -2^{\circ}C$), heating, drying, salting, sugaring, salt or sugar curing, pickling, sealing (canned and bottled products, vacuum pouch packaging), and controlled climate storage. Find out how the foods you eat are processed.

Processed foods Food supplies Canned and Storage location Temperature Semi-fresh Spices and Prepared Fresh foods Dried foods bottled foods foods seasonings products Dried foods Tabletop Room Shelves temperature Bananas, peaches Cereals (ex.rice) Cooking Pantry Onions Dried noodles, Soup stock Unwashed root Pickles Oil Vacuum-Room Underground bread Liquor, jams temperature storage vegetables(potato Pickles Dried herbs Beverages pouch Below room Outdoor pantry es,satoimo(Japan and canned products Normal temperature Kitchen garden ese potato), foods Pickles temperature onions) Outdoor Bury unwashed temperature vegetables Herbs and flavor hervbs 3∼7℃ Refrigerator Vegetables, Milk Butter, miso Jelly sweets fruits, eggs paste 7~10℃ Washed salads. Vegetable Pickles drawer vegetables, fruits -2~2℃ Chill Milk Refrigeration compartment Raw meat raw products fish(for a short tofu period), dried Small -3~0℃ fish compartment Raw meat,raw Instant fish, dried fish frozen foods Frozen foods Breads -18°C Freezer Freezing foods with shelf life

Learning about the methods of food preservation at home.

5.	Eating	safe
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Choosing the appropriate food storage location among the freezer, refrigerator, and other choices.

Keywords: food, preservation, freezer, refrigerator

Using the refrigerator.

Course content: Storing food in the refrigerator.

Materials: Picture of refrigerator, illustrations of various foods.

Methods:

1 Provide students with food illustrations and make them locate the appropriate place for each food between the freezer, main refrigerator space and the vegetable drawer.

2 Ask them to explain why.

③ The instructor will explain refrigerator mechanisms and food characteristics, then open a discussion on products that do not require refrigeration.



5. Eating safe	(4) Food labeling	1hour
		Inour

Food labeling is very important for dietary life. Attention should be paid to the various food-related issues such as food preservation, food additives or environmental issues. **Keywords:** Food labeling

Collecting food labels.1.Collect the food labels on the products you usually eat. Paste the labels on paper and present them to the children, hiding product names. Let them guess the food name from the food label contents.2. Announce all the guessed and right answers, then explain the reasons for the connection between certain foods and labels. Present the real products. 3. Explain the importance of food label information to introduce various food-related issues subjects such as food preservation, food additives and environmental issues.

Food label examples

	2	3
Name of product	Name of product	Name of product
Maltitol, sweetener, gum base,	INGREDIENTS cocoa mass,	INGREDIENTS Rice(52%),Vegetable
Food flavors, thickeners	sugar, cocoa	Oil, Sugar, Soy Sauce(3%), Tapioca
A part of the material contains	butter,	Starch, Sault,
the soybean and gelatin.	emulsifier: soya lecithin.	Spices: Dried Garlic, Chilli Powder,
150g	Flavoring : vanillin.	100g
□□Company	85g	Made in Thailand. Packed in UK.
	♦♦Company	OOCompany

(Answers) ①chewing gum

2 chocolate

③chilli rice cracker mix

Food labels currently provide the following information:

Ingredients, food additives, country of origin, freshness date, expiration date, quality preservation period, date produced, nutrition table, storage conditions, weight or volume, name and address of manufacturer, GE/GM declarations, organic or inorganic declarations, contact information for customer service, quality certification mark.

Further steps must be taken for incorporating allergens and artificial beef declarations in the food-labeling requirements.

<u>Genetically-engineered (GE) foods</u> have foreign and beneficial genes inserted into their genetic codes in order to create new characteristics. Herbicide or insect-resistant corn and potatoes are the examples of GE foods. Safety information of GE foods, such as allergy and health problems caused by long-term ingestion of such foods, are not revealed.

<u>Organic farm products</u> are produced without the use of any chemical fertilizers and pesticides.

<u>Allergenic ingredients</u>: Regardless of amount, allergen labeling is required for any food products containing the ingredients considered allergenic (ex. eggs, buckwheat)

5. Eating safe	(5) Food additives	1hour

Identify food colorings and learn about food additives.

Keywords: Food additives, artificial coloring

1. Thinking about the use of food additives.

Food additives are added to food in order to improve shelf life, quality, or to enhance the colors and flavor of food products. To ensure food safety, the types of additives that can be used for food products are specified by the food sanitation law.

2. Detecting food additives.

<u>Subjects for experiment</u>: pickles, fruit juice, cold beverage (soft drink), popsicles, candy, jellies

Required tools: flat pan, water glasses (assemble more than 3 transparent (for color observation) and heat resistant (for boiling) glasses or milk bottles), .gas burner, chopsticks, kitchen knife, white pure wool yarn (wash out any remaining fats and cut the wool into 10cm length pieces), tablespoon.

<u>Procedure</u>

- ① In each glass, fill up to 2/3 of the glass with one of the following: juice, melted popsicle, or cold beverage.
- ② Pickles and sweets are to be crushed or cut in small pieces. Place them in the glass (2/5 glass) and add water until it fills up 4/5 of the glass. Mix thoroughly with chopsticks.
- ③ When the water is dyed, pour it into another glass and add a tablespoon of vinegar.
- Prepare a flat pan halfway filled with water. Place the glasses into the pan and put the pan on the burner. Place five pieces of white wool into the glasses to heat them for 20 minutes. Then take out wool pieces with chopsticks and rinse them in water.

<u>Results</u>

If the wool retains color, artificial colorant has been used in the food. Natural coloring tends to dissolve or fade when washed. It may be useful to compare the color of the liquid in the glasses before and after experiment regarding beverages. For better understanding of the excessive use of artificial coloring, examine as many products as possible.



5.Eating safe	(6) Prevention of food poisoning	1hour
		Inour

Understanding the types of food poisoning through their characteristics, occurrence, symptoms and prevention methods in order to recognize the importance of sanitary control for a secure dietary life.

Keywords: bacterial food poisoning, natural food poisoning, prevention of food poisoning

1. Food poisoning

0 Occurrence of food poisoning.

Food poisoning includes bacterial poisoning (O-157, Salmonella), chemical poisoning caused by food laced with chemical substances (detergents), and natural poisoning caused by poisonous mushrooms or poisonous fish prepared at home. Incidence of bacterial food poisoning by E. coli O-157 is especially high, and approximately 90 percent of food poisoning cases are of bacterial origin.

② Types of bacterial food poisoning.

Bacterial food poisoning is classified into infectious food poisoning and toxic food poisoning. Infectious food poisoning results from the ingestion of food contaminated by bacteria. Due to bacterial infection of the intestinal lining, symptoms of acute gastroenteritis are presented through diarrhea, abdominal pain, and fever. Bacteria that cause infectious food poisoning include Salmonella, Vibrio parahaemolyticus, Campylobacter jejuni, pathogenic coli, and Clostridium perfringens. Toxic food poisoning results from the ingestion of the toxin produced by bacterial proliferation during consummation of the affected food. Gastrointestinal absorption of such toxins causes symptoms such as vomiting. Generally, toxic food poisoning has a shorter incubation period than infectious food poisoning, and lasts from 30 minutes to 8 hours (3 hours in general). Unlike infectious food poisoning, it is not the presence of living bacteria but the toxin produced by the bacteria which causes the food poisoning. Bacteria that cause toxic food poisoning include Staphylococchus aureus, Clostridium botulinum, and Bacillus cereus (vomiting type).

(3) How to avoid food poisoning (on your own)

Bacteria on the surface of cutting board are invisible to the naked eye. However, bacterial food poisoning can be prevented by regular practice of easy prevention methods, without the need to see the bacteria. <u>The three principles for the prevention of food poisoning include preventing bacterial infection, stopping bacterial growth, and exterminating bacteria.</u> Measures such as frequent hand-washing, separate use of cooking utensils by food type, time and temperature management of the food from cooking to serving, and sufficient application of heat are required.

- 2. About the parasites.
- What are the parasites?

Tapeworm and flukes remain dormant until eaten, such as raw meat or fish by the host. To prevent infection, keep fish, shellfish and raw meat under -20 until cooking. Do not put the raw foods in room temperature, and apply sufficient heating while cooking. In addition, avoid eating raw certain food ingredients.