

PLANNING AND EQUIPPING HOME ECONOMICS ROOMS  
IN KANSAS HIGH SCHOOLS

by

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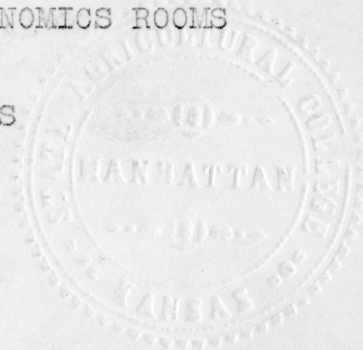
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## INTRODUCTION

Up until recently the high school Home Economics courses offered very little subject matter other than cooking and sewing. Accordingly, the Home Economics rooms were equipped only for the teaching of these activities. Today we find a different situation. The courses have been enlarged until they include not only cooking and sewing, but meal planning, preparation, and service; marketing; budgeting; household management; child care; home nursing; home living; related art; and related science. Because the field of work offered has been enlarged, the old equipment is no longer either adequate or properly arranged for the successful teaching of this work.

Many of the high schools of Kansas are adjusting to this situation by planning and equipping new Home Economics rooms, or by adding new equipment and rearranging old rooms. Little has been written on the subject of planning and equipping Home Economics rooms in high schools, and nothing has been written which definitely applies to the situation as it is found in the high schools of Kansas. Bulletins on equipment which are available are Federal Bulletins, Bulletin No. 124 on "Plan and Equipment for Vocational Classes in Home Economics", Bulletin No. 209 on "Equipment for Teaching

Home Making in Texas High Schools", Home Economics Circular No. 11 on "Equipment and Rooms for Home Economics Departments", Bulletin H-1 on "Problems Involved in Equipment Recommended for Establishing Departments of Vocational Home Making in the Public Schools of Kansas", and a bulletin on "Room Arrangement and Equipment for Home Economics" put out by the Michigan State Board of Control for Vocational Education. These bulletins are good, but they apply definitely to a vocational or a specific state situation and so are not completely applicable to Home Economics as it is taught in Kansas..

This study has been made to offer practical suggestions and help to those who are responsible for planning and equipping Home Economics rooms in Kansas high schools.

#### METHOD AND PROCEDURE

The Kansas Two Year Course of Study for Home Economics and the Kansas Vocational Course of Study for Home Economics were used as a basis for this study. They were chosen because they are the ones most widely used in Kansas high schools. It was thought that those schools having longer or shorter courses could easily plan and select their equipment from that suggested for the two year and vocational courses.

The courses were carefully studied and checked and the



plant and equipment needed to successfully teach them listed. Specialists in household equipment, Home Economics teachers and supervisors, dealers in equipment, books and bulletins on equipment, magazine articles, and catalogues on equipment were consulted. A complete discussion of the Home Economics plant, its equipment and arrangement was made. The aim has been to suggest practical standards which are in keeping with efficient and good economic practices.

Photographs, drawings, and charts have been used for illustration. Many of these have been taken from Kansas schools.

### THE COURSES OF STUDY

#### The Two Year Home Economics Course for Kansas High Schools

##### Clothing and Related Work--First Year, First Semester:

Unit I	How to Use a Sewing Machine.....	1	week
Unit II	Selecting and Making Underwear.....	4-5	"
Unit III	Planning and Making a School Dress...	5-6	"
Unit IV	Planning and Making Gifts.....	1	"
Unit V	Making a Uniform for Use in Foods Class.....	2-3	"
Unit VI	Care, Cost, and Alteration of Cloth- ing.....	2-3	"

Foods and Related Work--First Year, Second Semester:

Unit I	Learning to Use the Laboratory.....	1	week
Unit II	Planning, Preparing, and Serving Breakfast.....	6-8	"
Unit III	Caring for the Kitchen and Its Equip- ment.....	1	"
Unit IV	Planning, Preparing, and Serving Sup- per or Luncheon.....	6-8	"
Unit V	Entertaining in Home and School.....	1-2	"

Foods and Clothing--Second Year, First Semester:

Unit I	How to Can and Preserve Food.....	2	weeks
Unit II	Selecting and Preparing Food for the Family.....	5-6	"
Unit III	Planning and Arranging Kitchen.....	2	"
Unit IV	Planning the Wardrobe.....	1	"
Unit V	Choosing and Making a School Costume.	5-6	"
Unit VI	Selecting and Constructing Clothing for Children.....	2-3	"

Home and Family Unit Courses (Home Living)--Second Year,Second Semester:

Unit I	Family Relationships.....	2-3	weeks
Unit II	Family Finances.....	2-3	"
Unit III	Home Planning.....	4-5	"
Unit IV	Care of the House.....	2-3	"
Unit V	Health and Home Care of Sick.....	4-5	"

Unit VI Care of Children..... 2-3 weeks

THE VOCATIONAL HOME MAKING COURSE FOR  
KANSAS HIGH SCHOOLS

First Year

One Semester

$\frac{1}{2}$ day	Foods I and		
	Home Management.....	2/3..120 min...	18 weeks
	Related Science I		
	(General Science).....	1/3.. 60 min...	18 weeks

One Semester

$\frac{1}{2}$ day	Clothing I and		
	Textiles.....	2/3..120 min...	18 weeks
	Related Art.....	1/3.. 60 min...	18 weeks

Second Year

One Semester

$\frac{1}{2}$ day	Foods II and Nutrition.....	2/3..120 min...	12-14 weeks
	Home Nursing.....	2/3..120 min...	4-6 weeks
	Related Science II		
	(Physiology and Hygiene)...	1/3.. 60 min...	18 weeks

One Semester

$\frac{1}{2}$ day	Clothing II and Design.....	2/3..120 min...	14-15 weeks
	Child Care.....	2/3..120 min...	3-4 weeks
	Related Social Science		
	or Home Living.....	1/3.. 60 min...	18 weeks



## GENERAL CONSIDERATIONS OF HOME ECONOMICS ROOMS

The standards for Home Economics in high schools should approximate those that are possible in a good home in the given community. The Home Economics rooms, then, should have a homelike atmosphere and adequate equipment for the development of these standards of work. In order to accomplish this the set-up in each school must fit the needs of the particular community.

The size of the high school is a factor in determining the number of rooms to be devoted to the teaching of Home Economics work. If the building is small, there will probably be space for only one Home Economics room. In a larger building two rooms or even more may be provided for Home Economics work.

The size of the classes, as well as the number of classes, is another important factor in determining the number of Home Economics rooms. A class should be no larger than an instructor can teach successfully.

There is no scientific data as to how large a Home Economics class may be and be well taught, but twelve to sixteen seems to be a satisfactory number. Probably there should never be over twenty to twenty-four. However, in

some schools where the equipment is adequate and well arranged and special attention to classroom methods is given, as high as thirty to thirty-six are being handled satisfactorily in a class.

Small classes of six to twelve may take all of their Home Economics work quite well in one room. If the department is a growing one, it may be better to provide more room at the start; but when classes contain thirty to thirty-six students, it will be necessary to provide separate rooms for foods and clothing and separate rooms for teaching the other phases of Home Economics are desirable.

A third factor determining the number of rooms to be given to Home Economics work is the type of community and its financial condition. In a community made up of wealthy or expensive homes several Home Economics rooms may be necessary in order to approximate the type of home standards. In a community where families are less well-to-do and live simply fewer Home Economics rooms may be used which will be in keeping with the community conditions and still tend to raise living standards. No one should be encouraged to live beyond his income; so a community should not set up a Home Economics department beyond the standard which its families can afford.

However, it is important that a community should provide

and equip to the best of its financial ability a Home Economics department in keeping with good home standards in the community and adequate for the successful teaching of the various phases of home making.

### CHARACTERISTICS OF GOOD HOME ECONOMICS LABORATORIES AND CLASSROOMS

#### I. General

1. Good Home Economics laboratories and classrooms are located above the basement and close to the other classrooms in the building.
2. Home Economics rooms are located close to each other.
3. Each room is large enough for the number of students in the classes and for the successful teaching of the course.
4. The natural and artificial lighting is adequate for the needs and it comes from the proper direction to prevent working in shadows.
5. The ventilating system in the rooms provides plenty of fresh air without the discomfort caused from draughts.
6. The floors are durable, resilient, easily cared for, and attractive. They are preferably of hard wood.



7. The walls and ceiling are light colored and easily cleaned.
8. The equipment for each room is adequate for successfully handling the different phases of home making to be taught in it, and is well arranged into efficient work units.
9. Chairs rather than stools are provided for the students for their discussion lessons.
10. The blackboard space is adequate and well arranged in relation to the lighting so that all students can see it plainly.
11. The rooms are cheerful and have a homelike atmosphere.
12. Each room has a space provided that is adequate for the storage of supplies.

## II. Specific

### A. Foods Laboratory

1. It is close to the school lunch room or other rooms used for serving dinners, banquets, etc.
2. It has a convenient method for the disposal of garbage.
3. There is a plentiful supply of water.
4. There is a heating system in the room other than the cook stoves. The system is

conveniently located and easily regulated so it may be used only when needed.

5. The windows and doors of the room are well screened to protect from flies and small insects.
6. The equipment approximates that found in a good home kitchen. It is well arranged for convenience and efficiency in carrying out the activities in the foods course.
7. The foods room is well ventilated so that odors from cooking food will not permeate the rest of the building.

#### B. Clothing Laboratory

1. The room is supplied with running water.
2. It is so equipped that it may be used for serving meals if no other space is provided.
3. Several electric outlets are provided which may be used for irons or electric motors on sewing machines.
4. The natural and artificial lighting is good and comes from the right direction so that students will not have to work in shadows.
5. The equipment is adequate for the successful teaching of the clothing course.

6. A separate room or one corner of the clothing room is equipped for the fitting of clothes.

#### C. The Dining Room

1. It is located close to the kitchen so that meals can be served conveniently.
2. The equipment is adequate for the serving of meals.
3. The room expresses beauty both in the simple design of the furnishings and in their arrangement.

#### D. The Laundry Room

1. The finish on the walls is such that it is not harmed by moisture and can be easily cleaned.
2. The floor is not injured by water.
3. Several well insulated electric outlets are provided for the attachment of washing machines and irons.
4. The room is well ventilated so that clothes will dry quickly.
5. The equipment is sufficient for the teaching of the laundry activities and is well arranged.

#### E. The Bedroom

1. Simplicity, cleanliness, and a restful atmosphere are the distinguishing characteristics.



2. The equipment is adequate for teaching the units on the care of the bedroom and the care of the sick.

### LOCATION OF HOME ECONOMICS ROOMS

Desirable location of Home Economics rooms is shown in Table I.

Table I  
Location of Rooms

Location	Advantages	Disadvantages
Basement	1. Plumbing more easily installed and less expensive.	1. Usually near toilet rooms, and noises and odors become offensive to class. 2. Too far away from other classrooms. 3. Natural lighting is poor. 4. Usually cement floor which is tiring, cool, and damp. 5. Poorly ventilated. 6. Hard to keep clean. 7. Apt to contain mice and insects. 8. Food odors permeate building. 9. Basement often poorly kept and inferior in construction to the rest of the building. 10. Desirable standards for homemaking cannot be set and maintained in basement rooms.

First Floor	<ol style="list-style-type: none"> <li>1. Convenient for the delivery of supplies.</li> <li>2. Can have good natural lighting.</li> <li>3. Good ventilation.</li> <li>4. Close to other classrooms.</li> <li>5. Dry and easy to keep clean.</li> <li>6. Convenient for removal of waste.</li> <li>7. Can set and maintain desirable standards of homemaking.</li> </ol>	<ol style="list-style-type: none"> <li>1. Plumbing more expensive and harder to install.</li> <li>2. Food odors permeate upper stories.</li> </ol>
Second Floor	<ol style="list-style-type: none"> <li>1. Food odor not in rest of building.</li> <li>2. Easy to clean.</li> <li>3. Well lighted.</li> <li>4. Well ventilated.</li> <li>5. Close to other classrooms.</li> <li>6. Can approximate home atmosphere and set and maintain desirable standards of homemaking.</li> </ol>	<ol style="list-style-type: none"> <li>1. Plumbing more expensive and harder to install.</li> <li>2. Harder to deliver supplies.</li> <li>3. Harder to remove waste.</li> </ol>

### SIZE OF ROOMS

The size of rooms for Home Economics depends on the number of work units to be taught in each room, and on the number of students to be accommodated. Separate rooms for the teaching of clothing, foods, and meal service can be smaller than if only one room were provided for all three phases of Home Economics. In Kansas schools the size of the classes varies from six to twenty-four. It is not advisable

to plan any laboratory for less than twelve. Table II gives desirable room sizes for various size classes in typical Kansas situations.

The size of the kitchen, dining room, bedroom, bathroom, storage room, and fitting room need not vary according to the size of the classes, because the class work carried on in them will usually be done by groups of three or four. These rooms, especially, are made typical of a real home, so the girls can work in a homelike atmosphere and under home-like conditions.

Table II  
Size of Rooms

Number of Rooms Used for Home Economics	Size of Rooms for Following Number of Students			
	12	16	25	24
One Room: (Foods, meal preparation and serving, care of home, care of sick, care of children, laundry, clothing, fitting, storage.)	20'x 30'	22'x 36'	24'x 36'	28' x 40'
Two Rooms: 1. <u>Foods</u> (Foods, meal preparation and serving, care of home, laundry, storage.)	20'x 30'	22'x 30'	22'x 36'	24'x 36'
2. <u>Clothing</u> (Clothing, fitting, care of sick, care of children, storage.)	20'x 30'	22'x 30'	22'x 36'	24'x 36'



Three Rooms or More:				
1. <u>Foods</u> (Foods, laundry, care of home.)	16'x 24'	20'x 30'	22'x 30'	24'x 36'
2. <u>Clothing</u> (Clothing, fitting, child care, care of sick, storage.)	16'x 24'	20'x 30'	22'x 30'	24'x 36'
3. <u>Dining Room</u> (Meal serving.)	14'x 16'	14'x 16'	14'x 16'	14'x 16'
4. <u>Storage Room</u>	6'x 8'	6'x 8'	6'x 8'	6'x 8'
Home Economics Cottage:				
1. <u>Foods Laboratory</u>	16'x 24'	20'x 30'	24'x 30'	24'x 36'
2. <u>Kitchen</u>	12'x 14'	12'x 14'	12'x 14'	12'x 14'
3. <u>Dining Room</u>	14'x 16'	14'x 16'	14'x 16'	14'x 16'
4. <u>Clothing Laboratory</u>	16'x 24'	20'x 30'	24'x 30'	24'x 36'
5. <u>Bedroom</u>	14'x 16'	14'x 16'	14'x 16'	14'x 16'
6. <u>Bathroom</u>	6'x 10'	6'x 10'	6'x 10'	6'x 10'
7. <u>Fitting Room</u>	6'x 8'	6'x 8'	6'x 8'	6'x 8'
8. <u>Storage Room</u>	6'x 8'	6'x 8'	6'x 8'	6'x 8'

### WINDOWS AND VENTILATION

The number of windows desirable for the Home Economics classroom depends upon the amount of floor space in the room. Architects today are advocating window space in each room equal to one-sixth to one-fourth of the floor space, preferably one-fourth. For example, a 24'x 30' laboratory has a floor space of 720 square feet. It would be desirable to have window space equal to about 180 square feet. If each window were to be 4'x 7 $\frac{1}{2}$ ', there should be six windows in the room.

In high schools where some system of ventilation is used besides the windows it is well to have all of the windows on one side of the room. This method insures an even light

from one direction, but if the windows are the only means of ventilating, they should be placed on two sides of the room in order to insure cross ventilation.

"To insure good ventilation the windows should come within six inches of the ceiling. The old fashioned double-hung window which lowers from the top is the best type of window for the cottage or separate vocational building for the following reasons: It is less troublesome to handle, is like the windows at home, costs less, and is easily screened." (Federal Board for Vocational Education, 1927.)

Windows, especially for the foods laboratory, should be made so they can be easily screened. A fine mesh screen should be used so that flies and small bugs cannot get into the room.

Window shades should be provided for all of the windows. Buff or cream colored shades allow a brighter diffused light to pass through than green shades. The shades should be arranged so that they can be lowered from the top or raised from the bottom. This makes possible a better adjustment of the light in the room.

Curtains add to the cheer, attractiveness, and homelike atmosphere of the Home Economics rooms. They should be inexpensive, simple, easily cleaned, and attractive. They should be made out of a thin material and so arranged that they will not hinder light from coming in the windows.

## LIGHTING

In every classroom there should be plenty of well directed light by which students can read and work without eyestrain. The method of lighting used will determine the amount and intensity of light. There are three methods of lighting: direct, semi-direct, and indirect.

In direct lighting the light rays pass directly from the source of light to the eyes. This method of lighting should never be used as the direct light on the eyes causes eyestrain. In semi-direct lighting part of the rays are diffused as they pass through a light shade directly to the eyes, and part go to the ceiling and are reflected downward. The more the light rays are reflected, the more broken and diffused they become. A diffused light is soft and less intense than a direct light, and so it exerts less strain on the eyes. In indirect lighting all of the rays are reflected from the ceiling downward. This gives a completely diffused light which is probably too dim for classroom work.

Semi-direct lighting is the best method for classrooms. In order to secure semi-direct natural light windows should be placed close to the ceiling so that more of the rays can be reflected from the ceiling downward and be partly diffused.

The direction from which the light comes in relation to



the arrangement of equipment is important to consider. Students should not work facing a light--even a diffused light. Since most students are right handed, it is better to have the equipment arranged so that the light comes over the student's left shoulder as she is working. This prevents her from working in a shadow.

The light should be evenly distributed over the room so that each student can work without eyestrain. It is impossible to light a room evenly with just one light in the center of the ceiling. In installing the lights in the room, then, it is necessary to place them so that the light will be of the same intensity and equally diffused throughout the room.

### FLOORS

The floor of the Home Economics classroom receives hard usage, so it should be made of a good durable material properly laid and finished. Besides being durable a floor should be easily cleaned, attractive, and resilient or flexible so it will not tire one to stand and walk on it.

The materials from which floors are made and the advantages and disadvantages of each are given in Table III.

Table III  
Materials for Floors

Material	Advantages	Disadvantages
Hardwood, oak, maple, birch.	<ol style="list-style-type: none"> <li>1. Easy to care for.</li> <li>2. Durable.</li> <li>3. Resilient.</li> <li>4. May be attractive-ly finished.</li> </ol>	<ol style="list-style-type: none"> <li>1. Expensive.</li> </ol>
Softwood.	<ol style="list-style-type: none"> <li>1. Resilient.</li> <li>2. May be attractive-ly finished.</li> <li>3. Inexpensive.</li> </ol>	<ol style="list-style-type: none"> <li>1. Not as durable as hardwood.</li> <li>2. Not as easily cared for.</li> </ol>
Concrete.	<ol style="list-style-type: none"> <li>1. Inexpensive.</li> <li>2. Durable.</li> <li>3. Satisfactory if covered with lino-leum.</li> </ol>	<ol style="list-style-type: none"> <li>1. Not resilient and is tiring.</li> <li>2. Hard to clean.</li> <li>3. Not as attractive.</li> <li>4. Cool.</li> <li>5. Often damp.</li> </ol>
Tile.	<ol style="list-style-type: none"> <li>1. Easy to clean.</li> <li>2. Attractive.</li> <li>3. Durable.</li> </ol>	<ol style="list-style-type: none"> <li>1. Not resilient.</li> <li>2. Expensive.</li> </ol>

The attractiveness of a floor depends largely on the kind of finish given it. Floors may be finished in a variety of ways, as shown in Table IV.

Table IV  
Finishes for Floors

Finish of Floor	Advantages	Disadvantages
Wax.	<ol style="list-style-type: none"> <li>1. Attractive.</li> <li>2. Easily cared for.</li> </ol>	<ol style="list-style-type: none"> <li>1. Needs frequent re-finishing.</li> <li>2. Marred by water.</li> <li>3. Easily scratched.</li> <li>4. Slippery.</li> </ol>
Floor Varnish.	<ol style="list-style-type: none"> <li>1. Durable.</li> <li>2. Elastic.</li> <li>3. Attractive.</li> <li>4. Easily cared for.</li> <li>5. Inexpensive.</li> </ol>	<ol style="list-style-type: none"> <li>1. Needs refinishing from time to time.</li> <li>2. Rather easily scratched.</li> <li>3. Water isn't good for it.</li> <li>4. Slippery.</li> </ol>
Oil.	<ol style="list-style-type: none"> <li>1. Impervious to grease.</li> <li>2. Impervious to water.</li> <li>3. Is not slippery.</li> <li>4. Inexpensive.</li> </ol>	<ol style="list-style-type: none"> <li>1. Darkens as it ages.</li> <li>2. Becomes dingy and dirty.</li> <li>3. Hard to keep clean.</li> <li>4. Not very attractive.</li> </ol>
Paint.	<ol style="list-style-type: none"> <li>1. Gives a smooth finish.</li> <li>2. Impervious to water.</li> <li>3. Easily cared for.</li> </ol>	<ol style="list-style-type: none"> <li>1. Wears off unevenly and soon loses attractiveness.</li> </ol>
Shellac.	<ol style="list-style-type: none"> <li>1. Attractive.</li> <li>2. Smooth.</li> <li>3. Easily cared for.</li> <li>4. Inexpensive.</li> </ol>	<ol style="list-style-type: none"> <li>1. Scratches easily.</li> <li>2. Needs refinishing from time to time.</li> <li>3. Slippery.</li> </ol>



Linoleum.	<ol style="list-style-type: none"> <li>1. Attractive.</li> <li>2. Easily cared for.</li> <li>3. Durable.</li> <li>4. Resilient.</li> <li>5. Smooth.</li> <li>6. Not hurt by water.</li> </ol>	<ol style="list-style-type: none"> <li>1. Expensive.</li> <li>2. Needs varnishing frequently.</li> </ol>
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A hardwood floor is the most satisfactory for Home Economics classrooms and may be finished very attractively.

Old wooden floors in classrooms may be refinished.

"If the floor is not too badly worn and splintered, it may be scraped or sandpapered, scrubbed clean, and stains removed with a solution of oxalic acid (proportion one teaspoon oxalic acid to one cup water); then thoroughly rinsed, dried, and finished as a new floor. If old wooden floors are in too bad condition to be treated in this way, it is most satisfactory to cover them with linoleum." (Federal Board for Vocational Education, 1927.)

Concrete floors should never be recommended for a Home Economics classroom. However, in schools already having them they can be used satisfactorily by laying a flooring on top of the concrete and covering it with linoleum. Sometimes the linoleum is laid directly on the concrete. This makes a much better floor than the concrete itself.

When linoleum is used on either concrete or wooden floors, it should be laid and allowed to stretch and expand.

Then it should be cemented to the floor on a felt or paper and varnished. Battleship linoleum is the most durable kind to buy.

### WALLS

The walls of the Home Economics classroom may be made of rough plaster, smooth plaster, or tile. Rough plaster is not desirable, because the little crevices catch dirt easily. Tile is nice and easy to clean, but is quite expensive. Smooth plaster is inexpensive and, if finished properly, is easily cared for. It is the best for the classroom that must be economically built and equipped.

A variety of finishes may be used on the walls. The finish should be sanitary, easy to clean or refinish, and should give a cheerful atmosphere. The color should be determined by its attractiveness and by the exposure of the room. Cool colors such as light green and French grey, are desirable for southeast and southwest exposures, while the warmer colors such as cream and buff, brighten a northeast or northwest room. Whatever the color is, it should be light. White is not as suitable to use because of the glare from reflected light. It is also easily soiled and difficult to clean.

Table V lists some advantages and disadvantages for several kinds of wall finishes.

Table V  
Wall Finishes

Kind of Finish	Advantages	Disadvantages
Wallpaper.	1. May be attractive and cheery.	1. Hard to clean. 2. Gets spotted and dirty easily. 3. Expensive. 4. Expensive to keep doing it over.
Oilcloth paper.	1. May be washed. 2. Attractive	1. Expensive.
Wallpaper and Varnish.	1. May be washed.	1. Gives a glazed appearance which produces a glare. 2. Expensive.
Oil paint and Enamel finish.	1. May be washed. 2. Very attractive. 3. Easily refinished. 4. Durable.	1. Expensive.
Calcmining.	1. Easy to refinish. 2. Inexpensive. 3. Attractive.	1. Not so durable.

### CEILINGS

The ceiling should be made of the same material as the walls and should be finished in a light color that harmonizes with the color of the walls. It is important to have a light ceiling, because it will reflect much more light



than a dark one.

## WOODWORK

The woodwork in the Home Economics room should harmonize with the color scheme in the room, and should be smooth and without cracks. A variety of finishes may be used. Table VI gives a list of possible finishes and the advantages and disadvantages.

Table VI  
Finishes for Woodwork

Kinds of Finishes	Advantages	Disadvantages
Varnished.	<ol style="list-style-type: none"> <li>1. Can be washed.</li> <li>2. Easily applied.</li> <li>3. Shows natural grain of wood.</li> </ol>	<ol style="list-style-type: none"> <li>1. With age it may check.</li> <li>2. Glazed appearance may be undesirable.</li> </ol>
Painted.	<ol style="list-style-type: none"> <li>1. Attractive.</li> <li>2. Easy to apply.</li> </ol>	<ol style="list-style-type: none"> <li>1. Shows dirt quickly.</li> <li>2. Must be refinished more often.</li> <li>3. Does not stand cleaning as well.</li> <li>4. Covers natural beauty of wood.</li> </ol>
Enameled.	<ol style="list-style-type: none"> <li>1. Attractive.</li> <li>2. Can be washed.</li> </ol>	<ol style="list-style-type: none"> <li>1. Shows dirt quickly.</li> <li>2. Harder to apply.</li> <li>3. More expensive.</li> <li>4. Covers natural beauty of wood.</li> </ol>

## WORKING SURFACE HEIGHTS

The maintenance of correct posture is essential to the best health of the individual. Regular fifteen minute exercises a day are no doubt valuable, but they will have little ultimate effect on one's posture if incorrect posture is maintained the rest of the day. Whether or not posture is correct or incorrect may partly be due to one's habits, but it is largely due to the height of the surfaces where one works. A working surface that is too high causes curvature of the spine, throws the shoulders out of line, and strains the muscles of the abdomen and shoulders. Working surfaces that are too low cause round shoulders, a rainbow curve in the spine, and an unnatural relaxation of the abdominal muscles which causes a crowding of the abdominal organs. All incorrect working surfaces thus induce undue fatigue. The correct working surface for an individual should be that height at which the individual can work comfortably with the back and shoulders straight and the arms in a natural position.

Correct working surface heights will vary with the height of the individual, the length of the forearm, and the distance from the waist to the floor.

The following tests may be applied by individuals in determining their correct working surface heights:

1. Tables and stoves.

The height of tables and stoves is correct when one can stand erect with shoulders back and place palms of hands flat on the surface. This means that in working on these surfaces the arms will be raised to a slight angle, which is the normal position for working.

2. Sinks.

The height of the sink is correct when one can stand erect and place the knuckles of the doubled fist on the bottom of the sink. This height is usually one to two inches lower than the table height. If the sink is too deep, a small wooden slat frame may be used on the bottom to raise the dish pans while washing dishes.

3. Laundry tubs.

The rim of the laundry tub should come to the hips. Another method of determining the height of the tub is to measure from the ends of the fingers to the floor; then subtract six to seven inches, and the remaining length should be the distance from the floor to the bottom of the tub.



#### 4. Stools.

When sitting on a stool, one should be in the same position at the table as when she is standing at the table. A distance of from five to nine inches should be allowed for knee space between the stool and the table.

#### 5. Ironing boards.

The ironing board is of the correct height when one can stand with shoulders level, body tilted slightly forward at the hips, and the arm flexed slightly. It is usually one to two inches lower than the table height.

The following average working surface heights, as given by the Federal Board for Vocational Economics, 1927, for the average height girl of five feet and four inches are:

Height of table for standing and stove...	35 inches
Height of sink of $4\frac{1}{2}$ inches depth (top of sink).....	35 inches
Height of washtub (top of tub).....	36 inches
Height of ironing board.....	33 inches
Height of stool varies with height of table	

It is better to have the height of the table correct for standing and then use a high stool

Table VII gives some working heights for girls of different heights. It is to be remembered that these will not fit every girl, but are simply an average.

Table VII  
Suggested Working Surface Heights

Height of Girl	Height of Table	Height of Sink	Height of Stove	Height of Laundry Tub	Height of Ironing Board
5'	32"	29"	32"	33"	$30\frac{1}{2}"$
5' 2"	32"	30"	32"	34"	$30\frac{1}{2}"$
5' 3"	32"	31"	32"	35"	$30\frac{1}{2}"$
5' 4"	$32\frac{1}{2}"$	31"	$32\frac{1}{2}"$	35"	31"
5' 5"	$32\frac{1}{2}"$	31"	$32\frac{1}{2}"$	35"	31"
5' 6"	33"	$31\frac{1}{2}"$	33"	$35\frac{1}{2}"$	31"
5' 7"	33"	32"	33"	$35\frac{1}{2}"$	$31\frac{1}{2}"$
5' 8"	$33\frac{1}{2}"$	32"	$33\frac{1}{2}"$	36"	$31\frac{1}{2}"$

Since the same working surface height will not suit all girls, it is desirable to buy adjustable tables and ironing boards if possible. When it is not possible to buy adjustable equipment, it is well to equip the laboratory for the

average height girl, and then make individual adjustments as necessary.

To raise working surface heights the following methods may be used:

Table: Put the legs in blocks.

Sink: Add a piece of pipe to the plumbing fixtures underneath and thus raise the sink. If the sink is to be for the average girl, a small latticed platform may be placed in the bottom of the sink to raise the working height.

Stove: Put the legs on castors or in blocks.

Ironing board: Insert an extra length of pipe in the plumbing fixtures underneath.

The following methods may be used to lower a working surface height:

Table: Cut the legs off the right distance, make a little platform for the pupil to stand on, or put the stool in blocks when sitting at work.

Sink: Use a platform to stand on.

Stove: Use a platform to stand on.

Ironing board: Use a platform to stand on.

Laundry tubs: Use a platform to stand on.



## FAULTS COMMONLY FOUND IN HOME ECONOMICS ROOMS

The faults commonly found in Home Economics rooms may be divided into three classes. The first are those found in the room itself. These faults are due to putting Home Economics into an old building where the rooms were not designed for Home Economics work or to the poor planning of new buildings. The second group of faults are those found in the equipment itself: its size, material, construction, or inadequacy. Third, there are faults due to the poor arrangement of equipment.

### I. Faults in the Room

1. Often the foods laboratory is not located close to the room used for serving meals. Such an arrangement means a loss of efficiency in time and effort in serving meals.

2. Many Home Economics laboratories make no provision for discussion lessons.

3. Adequate storage space for supplies is frequently not provided.

4. The rooms are often poorly lighted and ventilated.

### II. Faults Found in the Equipment

1. There is often a lack of well selected illustrative

material.

2. Many schools have foods desks with stool attached. Such a stool does not furnish a good standard and makes it hard for the student to maintain a correct posture.

3. There is often much useless small equipment in the foods room such as large heavy wooden spoons and standard size bread pans with removable bottoms which make it impossible to use them for anything else.

4. Small individual electric hot plates or gas burners are often furnished. Electric hot plates are hard to repair, and no small individual heating device is very durable or in keeping with good home standards.

5. Inadequate oven space is a serious fault. Many schools provide only one oven for a whole class to use. It is impossible for all of the students to have good baking results under such crowded conditions.

6. Insufficient equipment prohibits the successful teaching of all the units of the course. The lack of equipment is usually most noticeable in teaching the units on care of the sick, care of children, laundering, related general science and art, textiles, and the serving of meals.

### III. Faults Due to the Poor Arrangement of Equipment

1. The equipment is frequently not arranged so as to

save steps in obtaining supplies and in doing one's work.

2. No consideration is given to the fact that right handed people work most efficiently with a right to left movement. Time and motions will be saved if the equipment is arranged so that activities can be carried on in a right to left order.

#### TYPICAL HOME ECONOMICS SITUATION IN KANSAS HIGH SCHOOLS

In some small schools only one room is provided for the teaching of all Home Economics work. A careful selection and arrangement of equipment is necessary in such a situation in order to teach successfully all of the units of work as they are outlined in the course of study.

Two Home Economics rooms are provided in many Kansas high schools. One room is used for the teaching of foods, the serving of meals, and the laundry unit. The other room is used for clothing, the care of children, and the care of the sick. Unless other provision is made, the clothing room is used for the serving of meals to large groups.

An increasing number of high schools are providing more than two rooms for the teaching of Home Economics work. Besides the foods and clothing rooms the other rooms are used for the serving of meals and the care of the sick. This



arrangement is found to be more desirable than the first two situations.

A few schools have Home Economics cottages. A cottage is as nearly like a home as possible except that it provides laboratories for the teaching of foods and clothing.

Practically the same considerations for the rooms and for the kind of equipment used will hold true for all of these situations. The main difference will come in the amount of equipment that will be necessary for teaching Home Economics in each set-up.

## FOODS LABORATORY

### General Considerations

It is always essential that the foods laboratory be well ventilated, light, airy, and cheerful. The windows should be screened to prevent the entrance of flies and small bugs. The room should be adequately supplied with running water, and there should be a convenient method for the disposal of garbage.

The location of the foods room in relation to the school lunch room or other rooms for serving meals is important. Valuable time and effort can be saved by having the foods room adjoin the serving room or separated from it only by the width of a hall.

Many foods rooms are well equipped for laboratory work but provide inadequate space and equipment for discussion lessons. The same provisions should be made for equipping foods rooms for discussion lessons as for any other classroom.

The equipment for teaching the foods course will be the same regardless of whether or not the room is also used for clothing, laundry work, or the serving of meals. When these units of work are taught in the foods room, additional equipment and a different arrangement will be necessary.

Some provision for storage space in the foods room is essential. A small storage room adjoining the foods room is recommended; however where space is limited, cupboards may be used.

### Type of Equipment

Tables for Pupil. A good table for the student in the foods laboratory should be durable, simple in design, attractive, and in keeping with the financial conditions of the community. The table should contain adequate storage space for all of the utensils for which the students will have the most need. This space should be divided into drawers for the smaller equipment and cupboards for the larger equipment. There should be adequate working space on top of the table

for the pupil. A good standard is 20 by 30 inches for each girl or a table two by five feet for two girls. The working surface height of the table is important to consider and should be from 30 to 35 inches. The stools should not be attached to the table for they are easily broken, seldom of the right height, and are uncomfortable. Separate stools that can be placed under the table when not in use are satisfactory. Some styles of unit desks do not have knee space, but toe space at least should be provided. Individual gas plates or electric hot plates located on the table top are undesirable, for the pupils should have the experience of cooking on real stoves with real ovens. For unit kitchens kitchen cabinets, ordinary tables, specially designed built-in cabinets, or foods tables may be used.

"Table tops should be of a material easily cleaned, non-absorbent, not warped or cracked by heat, fireproof, resistant to acids and alkalies, reasonable in price, and attractive." (Harris, 1926.)

There is no table top that has all of these characteristics. Table VIII gives the relative merits of different materials used for table tops as given by Harris, 1926.

The kind of table top selected should be determined by local conditions, good judgment, and the financial condition of the community. If it seems best that the tables be made locally, linoleum, zinc, and aluminum are materials that may



easily be used for the tops. If linoleum is well laid with metal strips, it is satisfactory.

A good type of top to use is the porcelain enamel such as is found on kitchen cabinets. The tops may be purchased and fitted on locally made tables. Such tops are easy to replace, relatively inexpensive, smooth, and easily cleaned.

Table VIII  
Materials for Table Tops

Material	Advantages	Disadvantages
Wood: Sugar pine, maple, oak, birch.	<ol style="list-style-type: none"> <li>1. Comparatively cheap.</li> <li>2. Noiseless.</li> <li>3. Attractive.</li> <li>4. Easily cleaned.</li> </ol>	<ol style="list-style-type: none"> <li>1. Unless thoroughly seasoned, warps with heat and dampness.</li> <li>2. If unvarnished, hard to clean.</li> <li>3. If varnished, needs frequent refinishing.</li> <li>4. Not fireproof.</li> </ol>
Vitrified tile.	<ol style="list-style-type: none"> <li>1. Attractive.</li> <li>2. Fireproof.</li> <li>3. Not affected by acids and alkalies.</li> <li>4. Lasting.</li> </ol>	<ol style="list-style-type: none"> <li>1. Seams wear out, thus collecting dirt.</li> <li>2. Expensive.</li> </ol>
Alberene and soapstone.	<ol style="list-style-type: none"> <li>1. Easily cared for.</li> </ol>	<ol style="list-style-type: none"> <li>1. Less attractive because of dark color.</li> <li>2. Absorbs grease.</li> </ol>
Glass: Opal-ite, vitrol-ite.	<ol style="list-style-type: none"> <li>1. Attractive.</li> <li>2. Easily cleaned.</li> <li>3. Nonabsorbent.</li> <li>4. Not affected by acids and alkalies.</li> </ol>	<ol style="list-style-type: none"> <li>1. Cracks with heat.</li> <li>2. Expensive.</li> <li>3. Scratches a little.</li> </ol> <p>Note: The cracking is less with thicker slabs.</p>

Porcelain enamel.	<ol style="list-style-type: none"> <li>1. Attractive.</li> <li>2. Easily cleaned.</li> <li>3. Cheap.</li> <li>4. Does not crack or warp.</li> <li>5. Easily replaced.</li> <li>6. Can be put on locally made desks.</li> </ol>	<ol style="list-style-type: none"> <li>1. Affected by acids.</li> <li>2. Cracks if struck a hard blow or if food chopper is screwed to table top. (Chips)</li> </ol>
Monel metal.	<ol style="list-style-type: none"> <li>1. Attractive.</li> <li>2. Durable.</li> <li>3. Easily cleaned.</li> <li>4. Resists heat.</li> <li>5. Not affected by acids or alkalies.</li> </ol>	<ol style="list-style-type: none"> <li>1. Expensive.</li> </ol>
Linoleum, glued to wood.	<ol style="list-style-type: none"> <li>1. Reasonable.</li> <li>2. Attractive in plain patterns.</li> <li>3. Durable if properly bound on edge with metal strips.</li> <li>4. Easily cleaned.</li> <li>5. Fairly resistant.</li> <li>6. Noiseless.</li> </ol>	<ol style="list-style-type: none"> <li>1. Buckles if not put on well.</li> <li>2. Blisters or cracks from overheating.</li> </ol>
Zinc.	<ol style="list-style-type: none"> <li>1. Not affected by alkalies.</li> <li>2. Fireproof.</li> <li>3. Durable if laid properly.</li> <li>4. Inexpensive.</li> <li>5. Easily fixed on locally made desks.</li> </ol>	<ol style="list-style-type: none"> <li>1. Affected by acids.</li> </ol>
Aluminum.	<ol style="list-style-type: none"> <li>1. Attractive.</li> <li>2. Wears well.</li> <li>3. Easily cleaned.</li> <li>4. Inexpensive.</li> <li>5. Easily fixed on locally made desks.</li> </ol>	<ol style="list-style-type: none"> <li>1. Stained by alkalies.</li> <li>2. Eaten by acids.</li> </ol>

Chairs and Stools. Separate stools should be provided for the foods room, because their heights can be adjusted by using blocks to raise them or cutting off part of the legs to lower them. When not in use, they can be placed under the table. Having separate stools also permits their use in other parts of the room when needed. Stools should have a broad base and be well braced.

In schools where the discussion and laboratory work must be carried on in the same room, it is desirable to have separate chairs for the pupils to use during discussion. Pupils cannot be expected to give their attention and do their best work in a discussion if they have to sit on stools from forty to eighty minutes. Any good chair used in regular classrooms will be suitable for the discussion lessons in the foods room. A chair with an arm for a writing table is satisfactory.

Instructor's Desk. The instructor's desk should be made of the same material and have the same finish as the students' cooking desks. The desk may then be used for demonstration purposes. There should be plenty of drawer space in the desk for storing the instructor's supplies. The desk should be high enough for the instructor to work at comfortably while standing. An adjustable chair can be used when the teacher wishes to sit at the desk to work. A desk two feet wide and three feet long is a satisfactory size.



Sinks. The sinks in the foods laboratory should be similar to those used at home and should be arranged for the students' convenience. A drain board on each side of the sink that is used in the unit kitchen is desirable. In laboratories where the laundry work as well as foods is taught, it is often practical to make the cover of the laundry tub serve as a drain board for a wall sink. (See Figure 1 by the Federal Board for Vocational Education, 1927.)

In the unit desk arrangement the sinks are grouped with the desks, and two sinks may be placed with their backs together in order to save space and plumbing. (See Figure 2 by the Federal Board for Vocational Education, 1927.) Such sinks will not need to be over 18 inches by 24 inches. All sinks should have a working surface height of from 34 inches to 36 inches. The depth of the sink should be at least four inches. A good sink should be attractive, easily cleaned, look sanitary, durable, not affected by acids or alkalies, and inexpensive. White porcelain sinks are the most desirable.

Table IX gives relative merits of the materials that may be used for sinks.

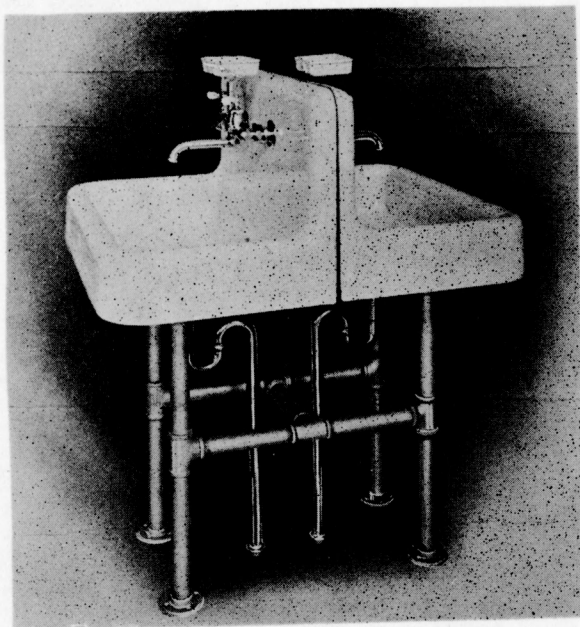


Figure 2. Arrangement of Sinks to Save Space and Plumbing.

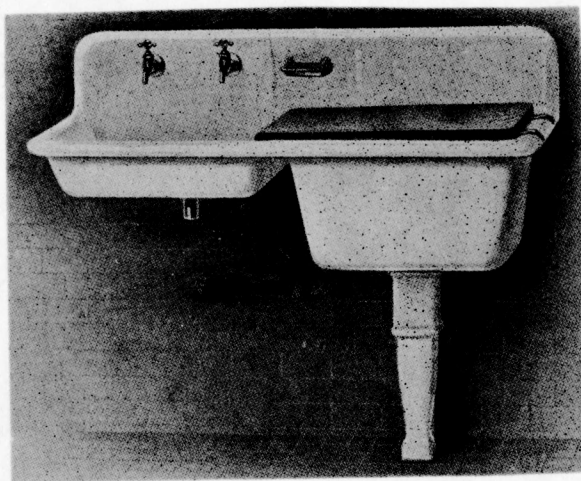


Figure 1. Wall Sink with Laundry Tub under Drain Board.

Table IX  
Materials Used in Sinks

Material	Advantages	Disadvantages
Slate	1. Smooth. 2. Inexpensive.	1. Does not look sanitary. 2. Likely to chip.
Soapstone.	1. Smooth 2. Inexpensive.	1. Does not look sanitary. 2. Likely to chip. 3. Absorbs grease and stains.
Galvanized iron.	1. Cheap. 2. Durable.	1. Not attractive. 2. Does not look clean.
Zinc.	1. Cheap. 2. Durable.	1. Not attractive. 2. Does not look clean. 3. Affected by acids.
White porcelain enamel.	1. Attractive. 2. Easily cleaned. 3. Durable. 4. Does not stain easily.	1. Affected by acids. 2. Relatively expensive. 3. May be cracked by hard blows.

Stoves. The factors to be considered in selecting stoves are the type of fuel used in the laboratory, the type of stove best adapted to community conditions, the number of students in the classes using them, and the cost.

The type of fuel used in the laboratory should be the same that is in general use in the community. If two or more



fuels are in general use, it is well to have a stove for each kind. The students thus become familiar with the fuels with which they will have to work at home. Gasoline is not to be recommended for use in the foods laboratory unless the girls are experienced in using gasoline stoves at home. Gasoline is too dangerous to take chances with when used by inexperienced girls. The use of electricity will depend somewhat on the current rate in the community as well as whether or not it is commonly used in homes. It is nice to use if the cost of operation is reasonable. At least one electric stove may be purchased in order that girls may become acquainted with its operation. Oil stoves are used in high schools in many communities. In such cases there should be a coal or wood range also. There are two types of oil stoves: those with wicks and the wickless. Two kinds of wicks used in different makes of stoves are the cloth and the asbestos wicks. The cloth wick is most widely used at present. The oil stoves may be purchased with either long or short burners. Long burners are more satisfactory, because they smoke less than the short burner oil stoves. Gas stoves should be used where gas is the common fuel in the community, but it is not advisable to install a separate gas system in the school building because of the cost and the disregard of community conditions. Table X gives the relative merits of types of stoves according to the fuel used.

Table X  
Types of Stoves Based on Fuel Used

Kind of Stove	Advantages	Disadvantages
Kerosene.	<ol style="list-style-type: none"> <li>1. Inexpensive initial cost.</li> <li>2. Fuel available anywhere in Kansas.</li> <li>3. Inexpensive to operate.</li> <li>4. Attractive.</li> </ol>	<ol style="list-style-type: none"> <li>1. Requires constant care and cleaning.</li> <li>2. Less convenient to operate and regulate.</li> <li>3. Does not give as hot heat as other kinds of stoves.</li> </ol>
Gasoline.	<ol style="list-style-type: none"> <li>1. Gives a very hot heat.</li> <li>2. Fuel readily available.</li> <li>3. Relatively inexpensive initial cost.</li> <li>4. Inexpensive to operate.</li> <li>5. Attractive.</li> </ol>	<ol style="list-style-type: none"> <li>1. Dangerous if not used properly.</li> <li>2. Requires constant care and cleaning.</li> <li>3. Inconvenient to operate and regulate.</li> </ol>
Gas.	<ol style="list-style-type: none"> <li>1. Gives a very hot heat quickly.</li> <li>2. Easy to operate.</li> <li>3. Easy to regulate.</li> <li>4. Relatively clean.</li> <li>5. May or may not be expensive.</li> <li>6. Attractive.</li> <li>7. Easy to clean.</li> </ol>	<ol style="list-style-type: none"> <li>1. Needs careful attention so no gas escapes into room.</li> <li>2. May or may not be expensive.</li> </ol>
Electricity.	<ol style="list-style-type: none"> <li>1. Retains heat well.</li> <li>2. Easy on utensils.</li> <li>3. Attractive.</li> <li>4. Easy to operate and regulate.</li> <li>5. May or may not be expensive to operate.</li> </ol>	<ol style="list-style-type: none"> <li>1. Expensive initial cost.</li> <li>2. May or may not be expensive to operate.</li> </ol>

It is important that the girls work with real stoves and real ovens. If good home conditions are to be maintained in the laboratory, the stoves should be similar to those used in the homes of the community. Adequate experience in the regulation of ovens can not be obtained through the use of thin metal, single, portable ovens. Whatever type of stove is selected it should be equipped with a good built in oven.

The number of students in the classes will determine the number of stoves needed for the successful teaching of the work. A safe rule is a four burner stove and a good oven for every two to four girls, depending on the arrangement and the amount of money available for the buying of stoves.

Cost is a factor in the purchase of any equipment. False standards are always set up when too expensive equipment is purchased. The amount of money spent on stoves should be in keeping with the financial condition of the community and the good practical standards of its homes.

Refrigerators. Some kind of a refrigerator should be provided for the foods laboratory. It may be placed in the laboratory or in a storage room.

A good refrigerator should be durable, well insulated, well lined, and easy to care for. Two kinds of refrigerators may be used, depending on local conditions: ice or mechanical.



Ice refrigerators are either top icers or side icers. Side icers are more convenient because they do not necessitate so much stooping since food can be placed higher in the box. The ice refrigerator should be conveniently placed for icing as well as for students' use. It may be desirable to provide for icing the refrigerator from the outside of the laboratory if ice is delivered at a time when the laboratory is locked.

Mechanical refrigerators contain liquified gases which absorb heat as they pass through the refrigerator, and thus cool the food compartments. Various means are used to liquefy the gas and to keep the cooling process continuous. Electricity, automatic gas heaters, or any ordinary heating device may be used. The cost of operating mechanical refrigerators by electricity will depend upon the local rate for electric current. Those using automatic gas heaters are relatively inexpensive to operate. Those operated by any ordinary heating device are inconvenient to use. Mechanical refrigerators are very efficient, but the initial cost is high.

Cupboards and Storage Space. Storage space must be provided in the foods laboratory for the students' aprons, drying of dish towels, food supplies, cleaning equipment, utensils used by class as a whole, illustrative material, and books.

A storage room about six by eight feet in which to store equipment which is used just occasionally and the food supplies which are purchased in large quantities is needed. If a separate room is not provided, cupboard space in the foods room should be provided for storing food supplies, cleaning equipment, and for utensils that are used only occasionally. Several types of cupboards are on the market. It is well to select a cabinet type, and one that contains one or more shallow drawers fitted with sliding trays that are suitable for the storage of silver. Whatever type of cupboard is selected, it should be fitted with adjustable shelves. The foods desks should provide storage space for individual equipment.

Two kinds of lockers may be provided for storing the students' aprons: (1) those lockers which are divided into small individual compartments in which aprons must be folded to be put away and (2) lockers in which the aprons may be hung full length on a dress hanger suspended on a lengthwise rod. Aprons that are kept folded will wrinkle and do not look as nice as those which hang full length. This second type of lockers should be so constructed that all of the aprons for one class can hang in one division, and only the one division be opened at a time.

In most foods laboratories the dish towels are dried on

rods fastened to one side of the foods desks. When there are several classes using the room, the dish towels become crowded, do not dry readily, and are unattractive. A better method for drying the tea towels is to provide a special cupboard which is well ventilated and which contains racks on which to hang the dish towels. (See Figure 3.) This method makes a better appearing laboratory and the towels can be spread out so they dry more rapidly.

Illustrative material loses its effectiveness when it becomes soiled or torn. Provision should be made for the proper storage of charts, posters, and similar materials. For this purpose wide shallow drawers are best. One of the storage cupboards may be selected with this purpose in mind.

The use of well selected reference books and bulletins is necessary for the successful teaching of any Home Economics subject. Each Home Economics room, therefore, should be equipped with a book case or book rack for the storage of the books. Book racks are inexpensive and suitable although book cases with glass doors look nicer and afford the books better protection from dust.

Storage cupboards may be built in or movable ones may be purchased from a company or made by local workmen. Movable cupboards are more desirable than built in, for they can be moved to fit into different room arrangements.



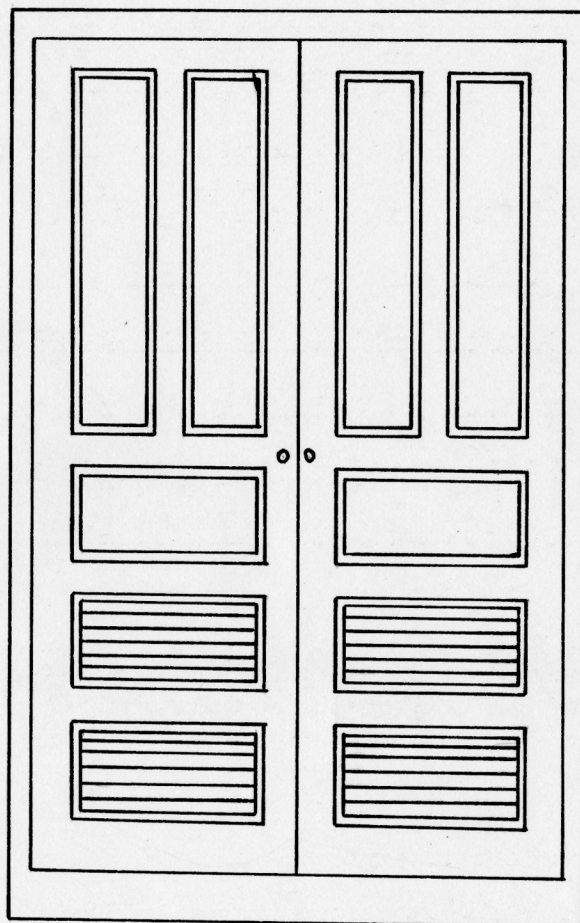


Figure 3. Towel Drying Case.  
(Denver Public Schools)

## Miscellaneous Equipment for Foods Laboratory

Supply Table. A standard suggested is to have a supply table for every twelve pupils. The supply table may be on castors so it can be moved easily, or it may be just a long plain table which would be suitable to use in serving meals.

Some supply tables are large and heavy, and provide storage space for sugar, flour, and other staple supplies. It is better to provide cupboard space for these supplies and have a light weight, easily movable supply table.

Blackboard. The blackboard should be placed so the light strikes it at a good angle, and the room should be arranged so all the pupils can see the blackboard during discussion lessons. A blackboard six to eight feet long is adequate for average size classes.

Bulletin Board. Each Home Economics room should be equipped with a bulletin board. It is usually made of cork-board although linoleum or burlap may be used satisfactorily. A two feet by three feet board is a nice size.

Magazine Rack. If a book rack is provided for the reference books, one or more shelves may be used for the storage of magazines. If a regular book case is used, it is well to provide a separate, small magazine rack.

Paper Towel Case. There should be at least one sink or lavatory in the room where the girls may wash their hands. A case should be placed by the sink to hold the paper toweling. This may be a very simple case, or it may be a combination case and cabinet; the cabinet may be used to store hand lotion, cleaning powders, and such materials.

### Small Equipment

The successful teaching of the activities in a foods course depends much upon the amount of small equipment, its construction, durability, and suitability.

Because small equipment is relatively inexpensive, its selection is not always given as careful consideration as the selection of large equipment. Uniformity in color and materials used in utensils has too often been the basis of their selection rather than their suitability and durability. Cooking utensils of the same color look pretty in a laboratory, but it might be more practical for the girls to have experience with a variety in the kinds of utensils such as granite, aluminum, and porcelain ware, thereby giving them an opportunity to judge the relative merits of each. The unit kitchen arrangement lends itself well to the use of utensils of various materials.

In buying small equipment one should keep in mind the way each piece is to be used. If it is to be used in the



preparation of family sized dishes of food, it should be the regular kitchen size. If it is to be used in the preparation of smaller amounts, such as cakes, bread, and pies, a smaller utensil should be purchased.

Cooking utensils may be purchased in many qualities and at many prices. It is to be expected with many classes using them that they will receive much harder wear than do utensils in a home. It becomes a real problem how to buy small equipment economically. Each community must decide whether to buy a poorer quality at a low price and replace frequently, or to buy a better quality of utensils at a high price and have them last longer. The decision will be largely determined by the available funds at hand. It is really more expensive in the long run, however, to buy as cheaply as possible and then have to replace the utensils often, and such a practice sets up wrong standards before the pupils. With a little time and careful consideration, a good quality utensil can usually be found at a reasonable price.

Table XI gives a list of minimum, moderate, and maximum amounts of equipment for classes of 12, 16, 20, or 24 students.

Table XI. Small Equipment for Foods Laboratories

Minimum	Am't of Equipment for No. Students				Moderate	Am't of Equipment for No. Students				Maximum	Am't of Equipment for No. Students			
	12	16	20	24		12	16	20	24		12	16	20	24
Dishpan (Enamel)	12	16	20	24	Dishpan (Enamel)	12	16	20	24	Dishpan (Aluminum)	12	16	20	24
Bowls (Enamel-Large)	6	8	10	12	Bowls (Enamel-Large)	6	8	10	12	Bowls (Enamel-Large)	6	8	10	12
Bowls (Enamel-Med.)	12	16	20	24	Bowls (Enamel-Med.)	12	16	20	24	Bowls (Enamel-Med.)	12	16	20	24
Bowls (Enamel-Small)	6	8	10	12	Bowls (Enamel-Small)	6	8	10	12	Bowls (Enamel-Small)	6	8	10	12
Percolator (Aluminum Non-electric)	3	4	5	6	Percolator (Enamel Non-electric)	3	4	5	6	Percolator (Good Alu- minum Electric)	3	4	5	6
Teapot (Aluminum)	3	4	5	6	Teapot (Earthenware)	3	4	5	6	Teapot (Nickel- plated Aluminum)	3	4	5	6
Service plates (Enamel)	12	16	20	24	Service plates (Enamel)	12	16	20	24	Service plates (Enamel)	12	16	20	24
Piepans (Tin)	2	3	4	5	Piepans (Aluminum)	2	3	4	5	Piepans (Pyrex)	3	4	5	6
Piepans (Tin-Small)	12	16	20	24	Piepans (Alum.-Small)	12	16	20	24	Piepans (Alum.-Small)	12	16	20	24
Cake pans (Tin- Large)	3	3	3	3	Cake pans (Aluminum- Large)	3	3	4	6	Cake pans (Aluminum- Large)	3	4	6	6
Cake pans (Tin- Small)	12	16	20	24	Cake pans (Aluminum- Small)	12	16	20	24	Cake pans (Aluminum- Small)	12	16	20	24



Table XI (Continued)

Bread pans (Tin-Large)	2	3	4	4	Bread pans (Aluminum-Large)	2	3	4	4	Bread pans (Pyrex-Large)	2	3	4	4
Bread pans (Tin-Small)	12	16	20	24	Bread pans (Aluminum-Small)	12	16	20	24	Bread pans (Aluminum-Small)	12	16	20	24
Egg beater (Dover Center-gear Double-wheeled- Large)	6	8	10	12	Egg beater (Dover Center-gear Double-wheeled- Large)	6	8	10	12	Egg beater (Dover Center-gear Double-wheeled- Large)	6	8	10	12
Egg beater (Dover Center-gear Double-wheeled- Small)	6	8	10	12	Egg beater (Dover Center-gear Double-wheeled- Small)	6	8	10	12	Egg beater (Dover Center-gear Double-wheeled- Small)	6	8	10	12
Egg beater (Whisk)	6	8	10	12	Egg beater (Whisk)	6	8	10	12	Egg beater (Whisk)	6	8	10	12
Measuring cups (Tin)	12	16	20	24	Measuring Cups (Glass)	12	16	20	24	Measuring Cups (Glass)	12	16	20	24
					Measuring Cups (Alum.)	12	16	20	24	Measuring Cups (Alum.)	12	16	20	24
Custard Cups (Enamel)	12	16	20	24	Custard Cups (Enamel)	12	16	20	24	Custard Cups (Pyrex)	16	20	24	28
Knives (Bonehandle)	18	18	24	30	Knives (Nickel plated)	18	18	24	30	Knives (Nickel plated)	18	18	24	30
Forks (Bonehandle)	18	18	24	30	Forks (Nickel plated)	18	18	24	30	Forks (Nickel plated)	18	18	24	30
Teaspoons (Tin)	24	30	42	48	Teaspoons (Nickel plated)	36	48	48	60	Teaspoons (Nickel plated)	36	48	48	60
Tablespoons (Tin)	12	18	24	24	Tablespoons (Nickel plated)	18	24	24	30	Tablespoons (Nickel plated)	18	24	24	30



Table XI (Continued)

Paring Knives (Stainless Steel Blades)	12	16	20	24	Paring Knives (Stainless Steel Blades)	14	18	22	26	Paring Knives (Stainless Steel Blades)	14	18	22	26
Butcher Knife (Steel Blade)	1	1	1	1	Butcher Knife (Steel Blade)	1	1	1	1	Butcher Knife (Stainless Steel Blade)	1	1	1	1
Bread Knife (Steel Blade)	1	1	1	2	Bread Knife (Steel Blade)	1	1	1	2	Bread Knife (Stainless Steel Blade)	1	1	2	2
Spatula	12	16	20	24	Spatula	12	16	20	24	Spatula	12	16	20	24
Spoons (Wooden 8" Handle)	12	16	20	24	Spoons (Wooden 8" Handle)	12	16	20	24	Spoons (Wooden 8" Handle)	12	16	20	24
Strainers (Fine Mesh)	6	8	10	12	Strainers (Fine Mesh)	6	8	10	12	Strainers (Fine Mesh)	7	9	12	14
Double Boiler (1 qt. size-Enamel)	6	8	10	12	Double Boiler (1 qt. size-Aluminum)	6	8	10	12	Double Boiler (1 qt. size-Stainless Steel)	6	8	10	12
Kettle (3 qt. size Enamel)	6	8	10	12	Kettle (3 qt. size Aluminum)	6	8	10	12	Kettle (3 qt. size Stainless Steel)	6	8	10	12
Kettle (8 qt. size Enamel)	1	1	2	2	Kettle (8 qt. size Aluminum)	1	1	2	2	Kettle (8 qt. size Stainless Steel)	2	2	2	3
Skillets (Russian Iron-Small)	12	16	20	24	Skillets (Russian Iron-Small)	12	16	20	24	Skillets (Russian Iron-Small)	12	16	20	24
Skillets (Russian Iron-Large 10")	1	1	1	1	Skillets (Russian Iron-Large 10")	1	1	1	2	Skillets (Russian Iron-Large 10")	1	1	2	2
Baking Dishes (Small Earthenware)	6	8	10	12	Baking Dishes (Small Earthenware)	6	8	10	12	Baking Dishes (Small Pyrex)	6	8	10	12



Table XI (Continued)

Baking Dishes (Med. Earthenware)	1	1	1	2	Baking Dishes (Med. Earthenware)	1	1	2	2	Baking Dishes (Med. Pyrex)	3	4	5	6
Muffin Pans (Tin-Med.)	6	8	10	12	Muffin Pans (Tin-Med.)	6	8	10	12	Muffin Pans (Alum.-Med.)	6	8	10	12
Cake Coolers	3	3	4	4	Cake Coolers	3	4	5	6	Cake Coolers	3	4	5	6
Brushes (Vegetable)	6	8	10	12	Brushes (Vegetable)	6	8	10	12	Brushes (Vegetable)	12	16	20	24
Brushes (Scrub)	6	8	10	12	Brushes (Scrub)	6	8	10	12	Brushes (Scrub)	6	8	10	12
Roaster (Enamel)	1	1	1	1	Roaster (Enamel)	1	1	1	1	Roaster (Aluminum)	1	1	1	1
Sink Strainer	3	4	5	6	Sink Strainer	3	4	5	6	Sink Strainer	3	4	5	6
Cups and Saucers (Enamel)	12	16	20	24	Cups and Saucers (American Ware)	12	16	20	24	Cups and Saucers (American Ware)	16	20	24	30
Plates (American Ware)	12	16	20	24	Plates (American Ware)	16	20	24	28	Plates (American Ware)	16	20	24	30
Soap Dishes	6	8	10	12	Soap Dishes	6	8	10	12	Soap Dishes	6	8	10	12
Egg Slicer	1	1	1	1	Egg Slicer	1	1	1	1	Egg Slicer	1	1	1	1
Match Boxes	3	4	5	6	Match Boxes	3	4	5	6	Match Boxes	3	4	5	6
Bowls (Porcelain)	12	16	20	24	Bowls (Porcelain)	12	16	20	24	Bowls (Porcelain)	12	16	20	24
Rolling Pins	6	8	10	12	Rolling Pins	6	8	10	12	Rolling Pins	6	8	10	12



Table XI (Continued)

Bread Board	6	8	10	12	Bread Board	6	8	10	12	Bread Board	6	8	10	12
Biscuit Cutter	12	16	20	24	Biscuit Cutter	12	16	20	24	Biscuit Cutter	12	16	20	24
Ice Cream Freezer	2	2	3	4	Ice Cream Freezer	2	3	4	5	Ice Cream Freezer	3	4	5	6
Lemon Squeezer	1	1	1	1	Lemon Squeezer	1	1	2	2	Lemon Squeezer	2	2	3	3
Doughnut Cutter	6	8	10	12	Doughnut Cutter	6	8	10	12	Doughnut Cutter	12	16	20	24
Graters	2	2	3	3	Graters	3	4	5	6	Graters	3	4	5	6
Jars ( $\frac{1}{2}$ pt.)	6	6	6	6	Jars ( $\frac{1}{2}$ pt.)	6	6	6	6	Jars ( $\frac{1}{2}$ pt.)	6	6	6	6
Jars (1 pt.)	6	6	6	6	Jars (1 pt.)	6	6	6	6	Jars (1 pt.)	6	6	6	6
Stove Brushes	3	4	5	6	Stove Brushes	3	4	5	6	Stove Brushes	3	4	5	6
Dust Pan	1	1	1	1	Dust Pan	1	1	1	1	Dust Pan	1	1	1	1
Broom	1	1	1	1	Broom	1	1	1	1	Broom	1	1	1	1
Food Chopper	1	1	2	2	Food Chopper	1	2	2	2	Food Chopper	2	2	3	3
Weighing Scale	1	1	1	1	Weighing Scale	1	1	1	1	Weighing Scale	1	1	1	1
Waste Basket	1	1	1	1	Waste Basket	1	1	1	1	Waste Basket	1	1	1	1
Tube Cake Pan	1	1	2	2	Tube Cake Pan	1	2	2	3	Tube Cake Pan	2	3	4	4



Tables XI (Continued)

Glasses	18	18	24	30	Glasses	18	18	24	30	Glasses	18	24	30	40
Salt & Pepper Shakers (Aluminum)	6	8	10	12	Salt & Pepper Shakers (Glass)	6	8	10	12	Salt & Pepper Shakers (China)	6	8	10	12
Teakettle (Enamel) (Used Occasionally)	1	1	1	1	Teakettle (Alum.) (Used Occasionally)	1	1	2	2	Teakettle (Nickel- plated) (Used Occasion- ally)	1	1	2	2
Toaster (Wire)	2	2	3	3	Toaster (Electric)	1	1	1	1	Toaster (Electric)	1	1	2	2
Sauce Pans (1 qt. size) (Aluminum)	12	16	20	24	Sauce Pans (1 qt. size) (Aluminum)	12	16	20	24	Sauce Pans (1qt. size) (Stainless Steel)	12	16	20	24
Lids for Sauce Pans	12	16	20	24	Lids for Sauce Pans	12	16	20	24	Lids for Sauce Pans	12	16	20	24
Lids for Kettles	7	9	12	14	Lids for Kettles	7	9	12	14	Lids for Kettles	8	10	12	15
Flour Sifter (Small)	6	8	10	12	Flour Sifter (Small)	6	8	10	12	Flour Sifter (Small)	6	8	10	12
Can Opener	1	1	1	1	Can Opener	1	1	2	2	Can Opener	1	1	2	2
Potato Masher	2	2	3	3	Potato Masher	2	2	3	3	Potato Masher	3	4	4	4
Knife Sharpener	1	1	1	1	Knife Sharpener	1	1	1	1	Knife Sharpener	1	1	1	1
Garbage Pail (Galvanized Iron)	1	1	1	1	Garbage Pail (Galvanized Iron)	1	1	1	1	Garbage Pail (Enamel)	1	1	1	1
					Potato Ricer	4	4	5	5	Potato Ricer	6	8	10	12

Table XI (Continued)

	Baking Sheet	1	1	2	2	Baking Sheet	2	2	3	3
	Oil Brush	2	3	4	5	Oil Brush	2	3	4	5
	Pressure Cooker (Cast Aluminum)	1	1	1	1	Pressure Cooker (Stainless Steel)	1	1	1	1
	Timble Iron	1	1	1	1	Timble Iron	1	1	2	2
	Nut Cracker	1	1	2	2	Nut Cracker	1	2	2	3
	Wooden Mallet	1	1	1	1	Wooden Mallet	1	1	1	1
	Scissors	1	1	1	1	Scissors	1	1	1	1
	Ice Pick	1	1	1	1	Ice Pick	1	1	1	1
						Pastry Tube & Bag	1	1	1	1
						Fireless Cooker	1	1	1	1



## ARRANGEMENT OF EQUIPMENT

The equipment in a foods laboratory should be arranged in such a way that it will eliminate as many steps and motions for the pupils as possible, approximate good home conditions, and permit the successful teaching of the units of work.

The arrangement of all the equipment depends largely on the arrangement of the pupils' desks. There are four recognized types of desk arrangement: parallel rows, hollow square, unit desk, and unit kitchen.

### Parallel Row

In this type of arrangement the desks are placed in rows parallel to each other and facing one end of the room. Two types of desks may be used: one kind at which two girls work on the same side, and the other at which four girls work--two on each side. For such an arrangement the desk accommodating two girls is better to use because all of the girls will then be facing the same direction. Figure 4 is a floor plan showing the parallel row type of arrangement.

### Hollow Square

In this type of arrangement the desks are placed end



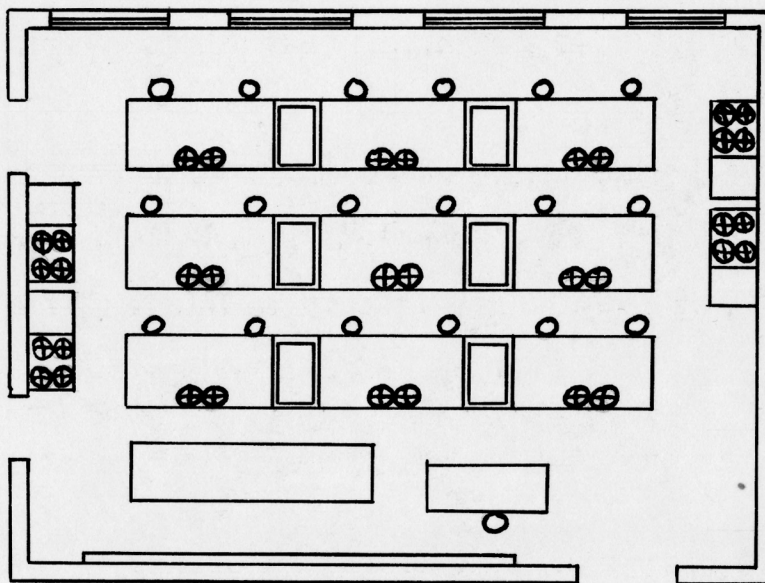


Figure 4. Parallel Row Type of Arrangement in Foods Laboratory.

to end in the form of a square, with a space in the center where a supply table is usually kept. The square may be unbroken except at one end, or it may have several openings to allow the pupils to reach the supply table more conveniently. The latter arrangement is better. Figure 5 is a floor plan showing the hollow square type of arrangement.

### Unit Desk

The arrangement of the equipment in the unit desk plan is more convenient for individual work. Each pupil has a working space, utensils, and easy access to a sink and a stove. This grouping tends to surround the girl with a home-like environment. Two types of desks may be used. One type allows girls to work side by side, and the other provides for the girls to work opposite each other. Figure 6 by the Federal Board for Vocational Education, 1927, is an illustration of the two types of unit desks that may be used. Figure 7 is a floor plan of the unit desk type of arrangement.

### Unit Kitchen

In this type of arrangement the room is divided off by low partitions, railings, or placing of the equipment itself into small kitchens accommodating from two to four girls.

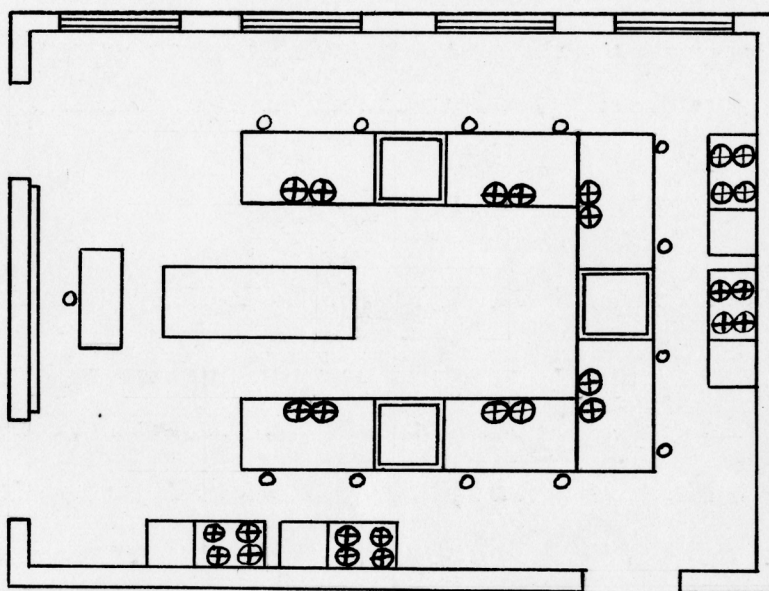


Figure 5. Hollow Square Type of Arrangement in Foods Laboratory.



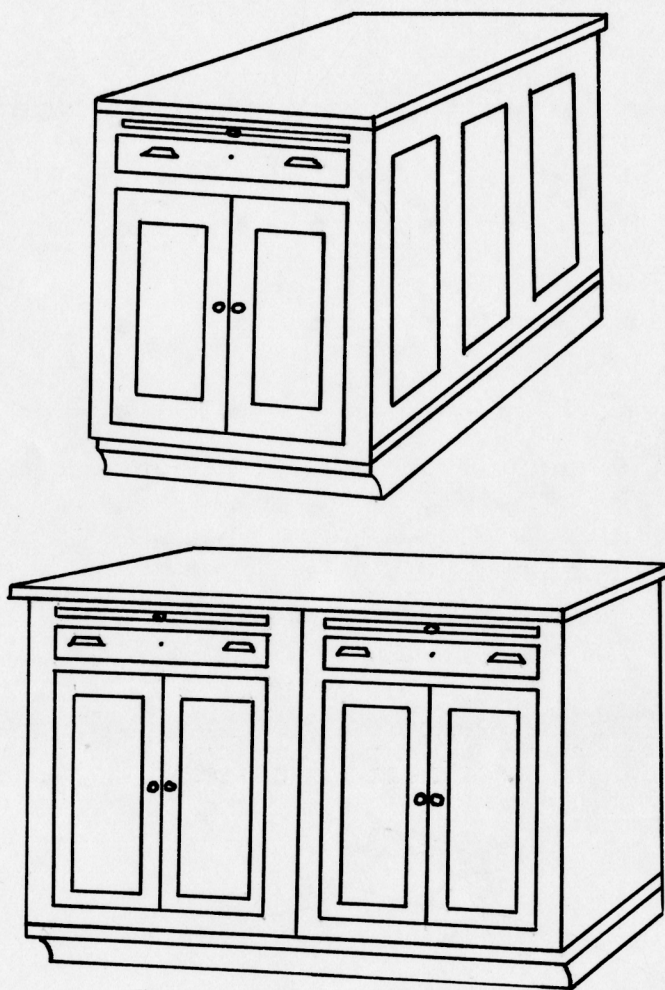


Figure 6. Types of Unit Desks.

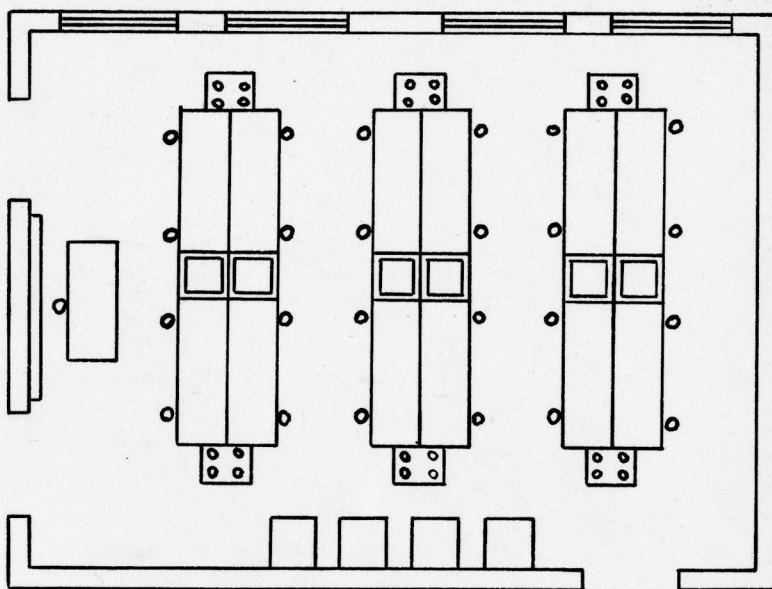


Figure 7. Unit Desk Type of Arrangement  
in Foods Laboratory.

Each little kitchen contains a sink, stove, working surface, a storage space for the utensils which may be family size, and a serving space. Such an arrangement is the most like a home kitchen of any of the four types. The type of equipment suitable for the unit kitchen plan is quite varied. Regular home equipment such as the kitchen cabinet, may be used; or the more formal laboratory equipment may be used. The different unit kitchens may be arranged in several ways, but in the arrangement convenience of equipment, methods of work, and the saving of steps and motions should be kept in mind. Figure 8 is a floor plan showing the unit kitchen arrangement.

The relative merits of the four types of desk arrangement are given in Table XII.

Table XII

Types of Desk Arrangements in Foods Laboratories

Type of Arrangement	Advantages	Disadvantages
Hollow Square	<ol style="list-style-type: none"> <li>1. Convenient for teacher to supervise work.</li> <li>2. Saves teacher steps and conserves her energy.</li> <li>3. Teacher can see whole class at once.</li> </ol>	<ol style="list-style-type: none"> <li>1. Too formal for pupils.</li> <li>2. Inconvenient for pupils.</li> <li>3. Wastes space.</li> <li>4. Too crowded.</li> <li>5. Wastes pupils' energy.</li> <li>6. Light may not be right for all students.</li> </ol>



Parallel Desks.	<ol style="list-style-type: none"> <li>1. Light comes in same direction for all students.</li> <li>2. All facing one way.</li> <li>3. Saves teacher's energy.</li> </ol>	<ol style="list-style-type: none"> <li>1. Too formal.</li> <li>2. Wastes pupils energy.</li> <li>3. Inconvenient for pupils.</li> <li>4. Too crowded.</li> <li>5. Hard for instructor to reach any one desk quickly.</li> </ol>
Unit Desk.	<ol style="list-style-type: none"> <li>1. Saves pupil's energy.</li> <li>2. Convenient for pupil.</li> <li>3. Gives girl some responsibilities as a home kitchen.</li> <li>4. Permits use of family size equipment.</li> <li>5. Better utilization of space.</li> </ol>	<ol style="list-style-type: none"> <li>1. More inconvenient for teacher.</li> <li>2. Uses more of teacher's energy.</li> <li>3. Perhaps makes necessary too much individual work.</li> </ol>
Unit Kitchen.	<ol style="list-style-type: none"> <li>1. Gives a home-like environment for pupils' work.</li> <li>2. Convenient for pupil.</li> <li>3. Saves pupil's energy.</li> <li>4. Permits use of home equipment.</li> <li>5. Pupils may work individually or in a group as they would at home.</li> <li>6. Better utilization of space.</li> <li>7. Lends itself well to range in cost.</li> <li>8. An easy arrangement to set up in a room not origi-</li> </ol>	<ol style="list-style-type: none"> <li>1. Harder to supervise.</li> <li>2. Takes more of teacher's energy.</li> <li>3. Inconvenient for teacher.</li> </ol>

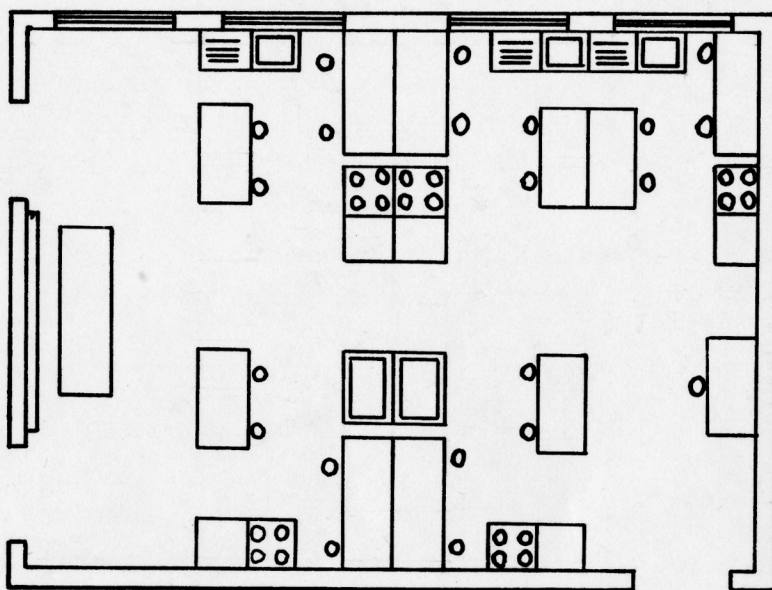


Figure 8. Unit Kitchen Type of Arrangement  
in Foods Laboratory.

In each type of arrangement the equipment may be poorly arranged or as well arranged as possible for the particular type used. Considering all of the advantages and disadvantages of each type, however, it seems probable that either the unit desk, unit kitchen, or a combination of the two are the best types to use for the most successful teaching of foods.

#### A One Room Combination Laboratory

In schools having only one Home Economics room two methods of procedure may be considered. If the room is small a combination desk for clothing and foods becomes a necessity. When the desk is used for foods, trays containing individual equipment are brought from a supply case and placed in the drawers. When the desk is used for clothing, the drawers are used for sewing supplies. (See Figure 9 by the Federal Board for Vocational Education, 1927.)

In a larger room the foods desks may be at one end of the room and the sewing tables at the other end. For such an arrangement see Figure 10, of the combination foods and clothing laboratory in the high school at St. George, Kansas. Only a corner of the sewing tables are shown in the illustration. In this situation the foods desks are arranged in parallel rows. It would be possible to arrange them in either unit desks or unit kitchens.



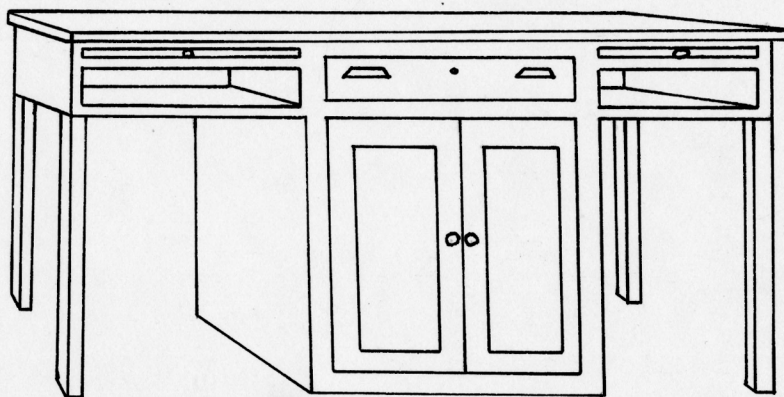


Figure 9. Combination Desk for Foods and Clothing.



Figure 10. Combination Foods and Clothing Laboratory in St. George, Kansas High School.



Figure 11. Laundry Equipment in a Foods Laboratory.  
(Federal Board for Vocational Education, 1927.)

## Foods Laboratories in a Two or More Than Two Room Set-up

Figure 12 shows a unit desk arrangement in a Kansas City, Kansas, high school. Figure 13 shows the unit kitchen arrangement in the Roosevelt High School in Salina, Kansas. Figure 14 is a close up view of one of these unit kitchens. Attention should be called to the provisions made for meal serving.

## CLOTHING LABORATORIES

### General Considerations

Careful consideration should be given to the planning and equipping of clothing laboratories. Well directed natural and artificial lighting is essential.

Sometimes it is necessary to use the clothing room for the serving of meals, so it should be located close to the foods room. This use of the room should also be considered in selecting the equipment.

The room may be used just for the clothing activities or its use may also include the care of children and the care of the sick. Additional equipment and a different arrangement will be necessary when the latter units are included.

It is desirable to have a small well lighted room, to be





Figure 12. Foods Laboratory in a Kansas City, Kansas High School. Unit Desk Arrangement.



Figure 13. Foods Laboratory in Roosevelt High School, Salina, Kansas. Unit Kitchen Arrangement.



Figure 14. Close-Up Views of Unit Kitchen, Salina, Kansas.

about six by eight feet, off of the clothing room which will be used for a fitting room, and another room about the same size for storage space. It is not always possible to have separate fitting and storage rooms. When this is the case, one corner of the clothing room can be used for fitting by separating it off with curtains or a screen. Storage space can be provided by means of lockers and cupboards that are portable or built in to the room.

#### Type of Equipment

Students' Sewing Tables. A good sewing table should be durable, smooth, simply finished, and the proper height. It is useless to provide highly polished tables because of the rough wear they receive from scissors and pins. A wood table plain or stained and varnished is satisfactory.

Some sewing tables do not contain any drawers for the storage of sewing boxes. When such tables are used, a locker must be provided for each student to keep her sewing supplies in. One very good sewing table is one at which four students can sit at a time and which contains a separate drawer for each girl. (See Figure 15.)

In some situations where one room is used for both clothing and foods a combination desk is desirable. When the desk is used for foods, trays containing individual



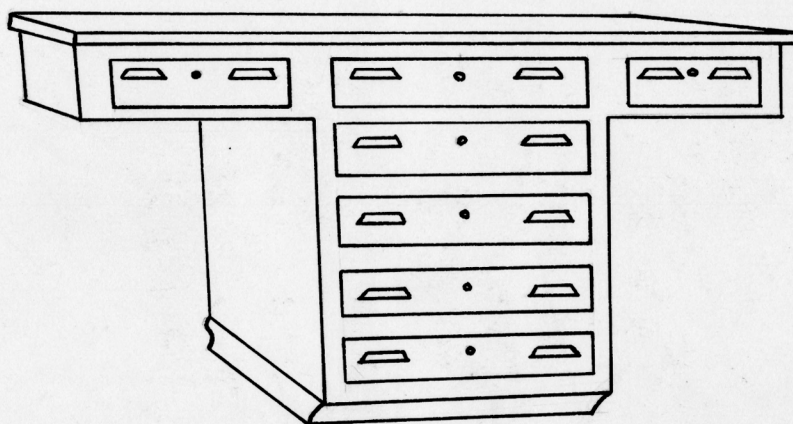


Figure 15. Sewing Table.

equipment are brought from a supply case and fitted into the desk drawers. When the desk is used for clothing, the drawers are used for sewing supplies. (See Figure 9.)

The height of the tables should be such that the students can maintain good posture while sitting at the table working. For the average student this height should be about 30 inches. Provisions should be made to raise or lower the table for students needing such adjustments. If the table is too high and is so nice that one does not wish to cut a part of the legs off, the student may be raised by setting the legs of the chair in blocks.

Chairs. Chairs should always be used in preference to stools in the clothing laboratory. Durable oak chairs designed for comfort may be purchased for a reasonable price.

Sewing Machines. The number of sewing machines needed depends on the number of students in the class. One sewing machine for every three or four girls is found to be satisfactory.

In buying a sewing machine it is important to select one for which repairs can be secured conveniently and quickly. The machine should be durable, easily operated, and easy to understand and adjust.

Some companies will make rates to schools on their sewing machines so that good reliable machines can be secured at a moderate price.

It may be desirable in some schools to provide an electric motor attachment for one or more of the machines. For most Kansas schools such a device would be neither practical nor economical.

Cupboards. Cupboards containing an individual locker for each student in which she may keep her sewing supplies will be necessary unless the sewing tables contain adequate drawer space. A locker space 12 by 12 by 18 inches will be sufficiently large. It is necessary that each lock.

A storage case where finished and partially finished clothes may be hung is essential in the clothing laboratory. The size of the case will be partly determined by the space in the room available for its storage. The case should be deep enough, 20 to 24 inches, and tall enough for hanging dresses in it full length. It should be equipped inside with a rod running the length of the case upon which to hang the clothes hangers. The doors may or may not be sliding and can be made either of wood or glass, but it is essential that they are fitted with lock.

Much illustrative material is used in a well taught clothing class, so a storage case for this material and other small clothing supplies is necessary. If there are large drawers in the bottom of the storage case for garments, they may be used for storing these other supplies. It is better



to provide a separate cupboard for the miscellaneous small equipment, especially if much textiles and related art is taught. This cupboard may be built into the wall or portable and should contain a space for shelves and several wide shallow drawers.

Ironing Boards. The ironing board may be built in or portable. If there are other built in features in the room, such as cupboards, a built in ironing board will be economical. One which will fold up into a cupboard or the side of the wall is better than a stationary one, for when it is not being used there is space available for other activities.

When the laundering is done in the foods room, a portable ironing board is satisfactory. One which will fold up and can be stored in a small space is best. It should be strong, durable, and easy to set up.

The height of the ironing board is one of the most important items to consider. Many ironing boards are too high for the ammount of pressure one uses on the iron in ironing. This condition throws the shoulders out of line, causes an "S" curve in the spine, and strains the muscles. The correct height for an ironing board is usually one to two inches lower than the corresponding correct table height for an individual.

Irons. The factors to consider in buying an iron are the size, the material from which it is made, the construc-

tion, the shape of iron and handle, weight, ease in repairing, and the cost of operation. A medium weight iron is good. Some manufacturers are putting out irons equipped with a heat control. This device adds to their safety and to a more economical operation.

Electric Outlets. One or more electric outlets should be provided for the attachment of the electric irons and of electric motors on the sewing machines if any are used.

Mirrors. A full length mirror is necessary for a well equipped clothing room. A triple mirror is nice and fits into the standards of some communities; however, a plain, single, full length mirror is satisfactory and more in keeping with financial situations in many Kansas schools.

Blackboard. Blackboard space should be provided for drawings and for use during class discussions.

Bulletin Board. A bulletin board for illustrative material is necessary. It may be made of cloth, corkboard, or a soft wood.

Instructor's Desk. The instructor's desk should be at least two feet wide, three feet long, and 30 inches high.

The correct working surface height for the average person sitting at work is about 30 inches from the floor. The desk should provide ample drawer space for storing the instructor's supplies. It should harmonize with the stu-

dents' sewing tables in material, design, and finish.

Equipment: Kinds and Amounts. Table XIII gives a list of equipment for a clothing laboratory and the amounts for classes of 12, 16, 20, or 24 students. Most small equipment such as scissors, tapelines, etc. is furnished by each student for her own use.

Arrangement of Equipment. The equipment in a clothing laboratory may be arranged in a variety of ways. The essential factor in arrangement is to be sure the light will come over the left shoulders of the students as they are seated at work. A parallel row arrangement of the tables is good if all the students sit on one side of the tables. This arrangement makes possible proper lighting and makes it easier for the instructor to carry on a discussion lesson. Sewing machines should be placed in the very best light available. See Figure 16 for a good arrangement of a clothing laboratory in the high school at Manhattan, Kansas. Notice the direction of the light on the students' work.

## THE LAUNDRY ROOMS

### General Considerations

In most schools laundering is not given as a separate course, but is offered as a small unit or problem in the





Figure 16. Clothing Laboratory in Manhattan, Kansas High School.

Table XIII. Equipment for Clothing Laboratories

Minimum	Am't of Equipment for No. Students				Moderate	Am't of Equipment for No. Students				Maximum	Am't of Equipment for No. Students			
	12	16	20	24		12	16	20	24		12	16	20	24
Sewing Machines	3	4	5	6	Sewing Machines	3	4	5	6	Sewing Machines	3	4	5	6
Ironing Boards	1	2	2	3	Ironing Boards	2	2	3	3	Ironing Boards	2	2	3	3
Irons (Electric)	1	2	2	3	Irons (Electric)	2	2	3	3	Irons (Electric)	2	2	3	3
Mirror	1	1	1	1	Mirror	1	1	1	1	Mirror	1	1	1	1
Dress Form	1	1	1	1	Dress Form	1	1	1	1	Dress Form	1	1	1	1
Whisk Broom	1	1	1	1	Whisk Broom	1	1	2	2	Whisk Broom	1	1	2	2
Yard Sticks	6	8	10	12	Yard Sticks	6	8	10	12	Yard Sticks	6	8	10	12
Drafting Paper (Roll)	1	1	1	1	Drafting Paper (Roll)	1	1	1	1	Drafting Paper (Roll)	1	1	1	1
Machine Needles (Pkg.)	2	2	3	3	Machine Needles (Pkg.)	3	3	4	4	Machine Needles (Pkg.)	3	3	4	4
Shears	1	1	2	2	Shears	1	2	2	3	Shears	2	2	3	3
Tape Line	2	2	3	3	Tape Line	2	2	3	3	Tape Line	2	2	3	3
Sewing Needles (Pkg.)	2	2	3	3	Sewing Needles (Pkg.)	2	2	3	3	Sewing Needles (Pkg.)	2	2	3	3
Thread (White and Black No. 50)	2	2	4	4	Thread (White and Black No. 50)	2	2	4	4	Thread (White and Black No. 50)	2	2	4	4



Table XIII. (Continued)

Pins (Pkg.)	1	1	1	1	Pins (Pkg.)	1	1	1	1	Pins (Pkg.)	1	1	2	2
Tailor Chalk	1	1	1	1	Tailor Chalk	1	1	1	1	Tailor Chalk	2	2	3	3
Bobbins and Shuttles (Extra)	3	4	5	6	Bobbins and Shuttles (Extra)	4	5	6	7	Bobbins and Shuttles (Extra)	4	5	6	7
					Tracing Board	1	1	1	1	Tracing Board	1	1	1	1
					Fitting Stand	1	1	1	1	Fitting Stand	1	1	1	1
					Tracing Wheel	1	1	2	2	Tracing Wheel	2	2	3	3
					Skirt Marker	1	1	2	2	Skirt Marker	2	2	3	3
										Electric Sewing Machine	1	1	1	1
										Small Loom	1	1	1	1



foods or home living course. It is not advisable to provide a separate laundry room to be used for so short a time. The laundry problem can be worked out successfully in the foods room with the use of portable equipment. (See Figure 11 by the Federal Board for Vocational Education, 1927.) In schools where much laundering is done or in schools having Home Economics cottages, separate laundry rooms may be provided.

A laundry room should be especially well ventilated to prevent it from becoming steamy and moist and to allow the clothes to dry rapidly. It should have good natural light both for washing and ironing. The walls should be washable and not affected by steam. The floor should not be affected by water. Linoleum cemented to the floor is good.

The equipment in the laundry room should be grouped into suitable work units; the washing equipment making up one unit, the drying equipment another, and the ironing equipment a third. These units should be grouped together in a right to left direction so as to save steps and motions.

A minimum amount of equipment for the laundry unit would include a laundry tub, washing machine and wringer, table, stove, clothes stick, clothes basket, drier, ironing board, iron, and small supplies. Oftentimes a store in the community will loan the school a washing machine for these

lessons. Most of the other equipment needed is used for other phases of Home Economics as well as laundering and will probably be a part of the regular equipment of the Home Economics room.

### Type of Equipment

Laundry Tubs. Laundry tubs may or may not be stationary. If they are to be stationary and the laundering is done in the foods room, they may be placed under a hinged drain board which is attached to the kitchen sink. (See Figure 1.) This method conserves space and permits economy in plumbing, for the tubs can then be attached to the main drain.

Non-stationary tubs are more economical and are efficient if they are cared for properly. Time and effort will be saved if they are placed on standards which can be rolled about. A regular galvanized iron tub is satisfactory, but a hole should be cut in the bottom of the tub and fitted with a stopper so it will be easy to drain the tub.

All tubs should be made of a material that will not rust, is non-absorbing, easy to clean, and is smooth. It is quite important that they should be placed at a suitable working height. The top of the tub should come to the hip line; for the average person this is about 36 inches from the floor.

Washing Machines. Factors to consider in selecting a washing machine are its size, the material of which it is constructed, type of construction, kind of power it uses, type of washing device, safety devices, efficiency, ease of operation, reliability of manufacturer, initial cost, and cost of operation. The cost of operation is determined partly by the power rate in the particular community. An electric washer may be inexpensive to operate in one community while a washer with a gasoline motor may be cheaper in another.

If the machine is borrowed from a store, different types can be borrowed from time to time. This gives the students an opportunity to become acquainted with several machines and their ease of operation.

The material in the washing machine and the type of construction determines the durability of the machine and its ability to hold heat. If the wringer is attached to the washing machine, it should be equipped with a safety catch. An enclosed motor also adds to the safety of the machine.

Table XIV gives the kind of materials used in washing machines and their relative advantages and disadvantages.



Table XIV  
Materials Used in Tubs of Washing Machines

Material	Advantages	Disadvantages
Copper.	<ol style="list-style-type: none"> <li>1. Easy to clean.</li> <li>2. Durable.</li> <li>3. Relatively inexpensive.</li> </ol>	<ol style="list-style-type: none"> <li>1. Good conductor of heat.</li> </ol>
Porcelain.	<ol style="list-style-type: none"> <li>1. Attractive.</li> <li>2. Easy to clean.</li> <li>3. Poor conductor of heat.</li> </ol>	<ol style="list-style-type: none"> <li>1. Expensive.</li> </ol>
Wooden.	<ol style="list-style-type: none"> <li>1. Poor conductor of heat.</li> <li>2. Inexpensive.</li> </ol>	<ol style="list-style-type: none"> <li>1. Hard to keep clean.</li> <li>2. Hard to keep from leaking.</li> <li>3. Soon lose their attractiveness.</li> </ol>
Aluminum.	<ol style="list-style-type: none"> <li>1. Very durable.</li> <li>2. Easily cared for.</li> </ol>	<ol style="list-style-type: none"> <li>1. Expensive.</li> <li>2. Good conductor of heat.</li> </ol>

Clothes are cleaned by water being forced in to take the place of the particles of dirt. Several types of washing devices are used in machines to accomplish this cleaning.

The "dolly" type of washing device is commonly found in hand power washing machines. It resembles a milk stool with its circular wooden piece and wooden legs. The clothes are moved around in the machine, thus giving the water a chance to get through them.

The "vacuum cup" type of washing machine, as the name suggests, works on the principle of a vacuum. Inverted metal cups suck the clothes up to the top of the machine and then drop them back into the water, giving the dirt a chance to be dislodged.

The "cylinder" type of washing machine consists of a cylindrical metal tub which rotates a few revolutions in one direction and then a few revolutions in the other. This causes the clothes to be swished through the water.

A fourth type of washing device is the "oscillating tub". The tub may be wooden or metal and it rocks back and forth. This motion moves the clothes through the water from one side of the tub to the other.

The other type of washing device is called the "gyrator" or "agitator". There are several variations of this type. The "gyrator" consists of two or more blades, usually uneven in size, which rotate back and forth through the water. They keep the clothes moving and force the water through them.

Good washing machines may be purchased equipped with any one of these washing devices. The "gyrator" type, however, seems to do a little more efficient work than the others.

Stoves. Stoves are needed in the laundering problem

for the occasional boiling of clothes and for the making of starch. They are not usually needed for the heating of water since practically all schools have a hot water system in connection with their heating plant. If the laundering is done in the foods room, the stoves used for the regular foods work may be used. A separate laundry room should be equipped with a small stove which burns the kind of fuel most commonly used in the community.

Ironing Boards. (See page 84.)

#### Miscellaneous Equipment

Tables. A simple, durable, movable table is necessary for the efficient laundering. The top should be finished in such a way that it is not affected by water, heat, or alkali. Zinc topped tables are good.

Driers. Driers which occupy a small amount of space when not in use are good. Several satisfactory types are available.

Some schools use the drying racks which may be raised or lowered from the ceiling by means of ropes and pulleys. Others prefer portable driers which can be folded up when not in use. In communities having Home Economics cottages drying space may be provided for out-of-doors. In such cases regular wire clothes lines can be used.



Irons. (See page 84.)

Storage Space. Cupboard space should be provided in the foods room or laundry room for the storage of miscellaneous laundry supplies such as soap, bluing, starch, and stain removers.

#### Equipment: Kinds and Amounts

The same amount of laundry equipment will be necessary for any size class since the work is done by groups of students rather than by the class as a whole. Table XV gives a minimum, moderate, and maximum amount of laundry equipment to be purchased by a school for the teaching of this unit of work.

### DINING ROOM

#### General Considerations

Some provision must be made for the serving of meals in connection with the teaching of the foods course. If there is no separate dining room, a part of the foods room must be used. In the unit kitchen type of arrangement a serving table for four is usually provided for each kitchen. Sometimes one corner of the foods room is equipped as a dining room. Many of the new high school buildings, however, are providing separate dining rooms. Figure 17 is the dining

Table XV. Equipment for a Laundry Room

Equipment	Minimum Amount	Equipment	Moderate Amount	Equipment	Maximum Amount
Borrow Washing Machine from a store	1	Washing Machine (In-expensive Electric)	1	Washing Machine (Electric Desirable)	1
Tubs (Stationary or on Standards)	2	Tubs (Stationary or on Standards)	2	Tubs (Stationary or on Standards)	2
Wringer	1	Wringer	1	Wringer	1
Boiler	1	Boiler	1	Boiler	1
Clothes Basket	1	Clothes Basket	1	Clothes Basket	1
Clothes Stick	1	Clothes Stick	1	Clothes Stick	1
Washboard	1	Washboard	1	Washboard	1
Clothes Pins	4 doz.	Clothes Pins	4 doz.	Clothes Pins	4 doz.
Clothes Drier	1	Clothes Drier	1	Clothes Drier	1
Use Ironing Board from Sewing Room	1	Use Ironing Board from Sewing Room	1	Ironing Board	1
Use Iron from Sewing Room	1	Use Iron from Sewing Room	1	Irons (Electric)	1



Figure 17. Dining Room in Iola, Kansas High School.



Figure 18. Breakfast Nook in Foods Laboratory.  
(Federal Board for Vocational Education, 1927.)



room in the high school at Iola, Kansas. The characteristics of a good dining room and its equipment will be about the same in either case.

Attractiveness, simplicity, and a cheerful, homelike atmosphere are the keynotes in the planning and furnishing of a dining room. If the pupils are allowed to help plan and furnish the dining room, they will develop good standards and will take a greater personal interest and pride in the room.

An attractive dining room need not be an expensive one. Breakfast furniture may be used, as shown in Figure 18 by the Federal Board for Vocational Education, 1927. Both dining room furniture and breakfast furniture may be purchased unfinished and the students will be interested in finishing it as one of their problems. Sometimes used pieces of furniture can be secured inexpensively and refinished by the classes into very attractive pieces.

It is well to have enough table space so that all of the students in the class can eat at one time and have room for a few guests. If the main dining room table is not large enough, card tables or small tables at which four can be served nicely should be purchased.

If the dining room is large enough, these extra tables may be placed there. If the dining room is too small for

this arrangement, the tables may be set up in the foods room during the teaching of the foods units.

### Type of Equipment

Table. The dining room table should express beauty in material, workmanship (construction), finish, and the simplicity of its design. Oak and walnut are suitable materials and finish attractively. Walnut is more expensive than oak. The table may be left in its natural color or stained, then varnished and either waxed or rubbed with a good furniture polish until it gives a fine dull lustre.

The size of the table will be determined by the size and shape of the room and the extent to which the table is to be used. A table which will serve four people nicely when it is closed is satisfactory for most schools.

Chairs. It is desirable to select chairs for the dining room that match the dining table in material, design, and finish; however, chairs of the same material and finish and a simple harmonizing design are satisfactory. They should be durable and constructed for comfort.

Buffet. A buffet or china closet adds to the attractiveness of the dining room and serves as a storage place for the table china.

If a buffet is selected, it should match the table and chairs. Its size is determined by the size of the room and

the amount of storage space needed. A buffet without mirror is preferable at the present time.

A china closet is less expensive than a buffet and has more storage space. It may not go with the other furnishings in the room as well as a buffet, but it proves to be quite satisfactory.

China. The china selected for meal service should be practical and still express beauty in material and design. Plain or simple designs are always in good taste while elaborate ones go by fads.

One may choose either an imported china or American china. Imported china is good but often very expensive. For school purposes it is much better to use an inexpensive imported china or American china which may be secured in a good quality and at a reasonable price. It is well to choose a pattern that is in open stock so that broken pieces may be replaced easily and quickly.

Silverware. A good standard silver plated set of silverware is desirable for use in the dining room. A simple pattern in open stock should be selected so that new pieces can be added to the set easily. Sterling silver is not at all to be recommended for school use as its cost makes it prohibitive. Where money is limited monometal proves satisfactory. Chromium is also being recommended for school ware.



Linens. The dining room linens include tablecloths, luncheon cloths or doilies, dinner napkins, luncheon napkins, and tray doilies.

The quality of linen to be purchased should be determined by the funds available. A very fine quality, pure linen cloth is quite expensive, but nice quality linen can be purchased at a reasonable price. The same standards should be set for the linens as for the rest of the Home Economics equipment.

#### Equipment: Kinds and Amounts

Table XVI gives a list of the minimum, moderate, and maximum kinds and amounts of equipment for classes of 12, 16, 20, or 24 students.

### THE BEDROOM OR CARE OF THE SICK

#### General Considerations

The ideal provisions for teaching care of the sick is to have a separate room for a bedroom. Such provision can easily be made in a Home Economics cottage, but it is not always possible nor practical to have a bedroom in the high school building. If a separate room is not available, portable equipment can be used in the clothing room or one corner of the clothing room can be divided off for a bedroom. Some-

Table XVI. Equipment for Serving Meals

Minimum	Am't of Equipment for No. Girls				Moderate	Am't of Equipment for No. Girls				Maximum	Am't of Equipment for No. Girls			
	12	16	20	24		12	16	20	24		12	16	20	24
Linens:					Linens:					Linens:				
Tablecloth	2	2	3	3	Tablecloth	2	2	3	3	Tablecloth	2	2	3	3
Silence Cloth	1	1	1	1	Silence Cloth	1	1	1	1	Silence Cloth	1	1	1	1
Dinner Napkins	18	18	24	24	Dinner Napkins	18	18	24	30	Dinner Napkins	18	18	24	30
Lunch Cloth	2	2	3	3	Lunch Cloth	3	3	4	4	Lunch Cloth	3	3	4	4
Lunch Napkins	18	18	24	24	Lunch Napkins	18	18	24	24	Lunch Napkins	18	18	24	30
Tray Cloths	2	2	3	3	Tray Cloths	2	2	3	3	Tray Cloths	3	3	4	4
Centerpiece	2	2	3	3	Centerpiece	2	2	3	3	Centerpiece	3	3	4	4
					Lunch Doilies	12	18	24	24	Lunch Doilies	18	18	24	30
China (Inexpensive American Ware):					China (English Ware, as Johnson Ware):					China (Good American or English Ware):				
Dinner Plates	18	18	24	24	Dinner Plates	18	18	24	30	Dinner Plates	18	18	24	30
Salad Plates	18	18	24	24	Salad Plates	18	18	24	30	Salad Plates	18	18	24	30
Luncheon Plates	18	18	24	24	Luncheon Plates	18	18	24	30	Luncheon Plates	18	18	24	30



Table XVI (Continued)

Bread & Butter Plates	18	18	24	24	Bread & Butter Plates	18	18	24	30	Bread & Butter Plates	18	18	24	30
Dessert Plates	18	18	24	24	Dessert Plates	18	18	24	30	Dessert Plates	18	18	24	30
Cups and Saucers	18	18	24	24	Cups and Saucers	18	18	24	30	Cups and Saucers	18	18	24	30
Sauce Dishes	18	18	24	24	Sauce Dishes	18	18	24	30	Sauce Dishes	18	18	24	30
Cereal Dishes	12	18	24	24	Cereal Dishes	12	18	24	24	Cereal Dishes	12	18	24	24
Soup Dishes	12	18	24	24	Soup Dishes	12	18	24	24	Soup Dishes	18	18	24	24
Gravy Boat	1	1	2	2	Gravy Boat	1	1	2	2	Gravy Boat	1	1	2	2
Platter (Small)	1	1	2	2	Platter (Small)	1	1	2	2	Platter (Small)	1	2	2	2
Platter (Medium)	1	1	2	2	Platter (Medium)	1	1	2	2	Platter (Medium)	1	1	2	2
Cream & Sugar Set	1	1	2	2	Cream & Sugar Set	1	1	2	2	Cream & Sugar Set	2	2	3	3
Serving Tray	1	1	2	2	Serving Tray	1	2	2	2	Serving Tray	2	2	3	3
Vegetable Dishes	2	2	3	3	Vegetable Dishes	2	2	2	3	Vegetable Dishes	3	3	4	4
Jelly Dish	1	1	2	2	Jelly Dish	1	1	2	2	Jelly Dish	2	2	2	2
Relish Dish	1	1	2	2	Relish Dish	1	1	2	2	Relish Dish	2	2	2	2
Casserole	1	1	1	1	Casserole	1	1	1	1	Casserole	2	2	2	2



Table XVI (Continued)

					Finger Bowls	6	8	12	12	Finger Bowls	12	18	24	24
Water Glasses	18	18	24	24	Water Glasses	18	18	24	30	Water Glasses	24	30	48	48
Sherbert Dishes	18	18	24	24	Sherbert Dishes	18	18	24	30	Sherbert Dishes	18	24	24	30
Silver, (Monometal):					Silver (Community Plate; such as Tudor):					Silver (Community Plate; such as 50 yr. Guarantee):				
Butter Knife	1	1	2	2	Butter Knife	1	1	2	2	Butter Knife	2	2	3	3
Sugar Shell	1	1	2	2	Sugar Shell	1	1	2	2	Sugar Shell	2	2	3	3
Dinner Knives & Forks	18	18	24	24	Dinner Knives & Forks	18	18	24	30	Dinner Knives & Forks	18	18	24	30
Dessert Forks	18	18	24	24	Dessert Forks	18	18	24	30	Dessert Forks	18	18	24	30
Teaspoons	30	36	48	48	Teaspoons	30	36	48	54	Teaspoons	30	36	48	54
Salad Forks	18	18	24	24	Salad Forks	18	18	24	30	Salad Forks	18	18	24	30
Soup Spoons	12	18	24	24	Soup Spoons	12	18	24	24	Soup Spoons	18	18	24	24
Butter Spreaders	12	18	24	24	Butter Spreaders	18	18	24	30	Butter Spreaders	18	18	24	30
Tablespoons	2	2	3	3	Tablespoons	2	2	3	3	Tablespoons	3	3	4	4
Gravy Ladle	1	1	2	2	Gravy Ladle	1	1	2	2	Gravy Ladle	1	1	2	2



Table XVI (Continued)

Meat Fork	1	1	1	1	Meat Fork	1	1	1	1	Meat Fork	1	1	1	1
Carving Set	1	1	1	1	Carving Set	1	1	1	1	Carving Set	1	1	1	1
Miscellaneous:					Miscellaneous:					Miscellaneous:				
Salad Fork and Spoon (Wood)	1	1	1	1	Salad Fork and Spoon (Wood)	1	1	1	1	Salad Fork and Spoon (Wood)	1	1	1	1
Salt and Pepper Shakers	3	4	5	6	Salt and Pepper Shakers	3	4	5	6	Salt and Pepper Shakers	4	5	6	7
Water Pitcher	1	1	1	1	Water Pitcher	1	1	1	1	Water Pitcher	1	1	2	2
					Tea Wagon	1	1	1	1	Tea Wagon	1	1	1	1
Flower Bowl	1	1	1	1	Flower Bowl	2	2	2	2	Flower Bowl	2	3	3	3
Flower Vase	1	1	1	1	Flower Vase	2	2	2	2	Flower Vase	2	3	3	3
					Additional:					Additional:				
					Ice Tea Glasses	18	18	24	24	Ice Tea Glasses	18	18	24	30
					Ice Tea Spoons	18	18	24	24	Ice Tea Spoons	18	18	24	30
										Dessert Spoons	18	18	24	30
										Punch Bowl	1	1	1	1
										Punch Cups	24	36	36	48

times a room can be fitted up for a rest room and used for the few weeks work on the care of the sick.

The essential characteristics of a good bedroom are cleanliness, simplicity, attractiveness, and a cheery restful atmosphere. The bedroom should be like a home bedroom and yet easily convertible into a room for the sick. (See Figure 19 by the Federal Board for Vocational Education, 1927.)

#### Type of Equipment

Bed. The bed for the sick should be single, washable, and quite high, about 35 inches, so a person caring for the sick will not have to stoop. A hospital bed incorporates all of these features and also has an adjustable back rest. however, an ordinary bed can be made satisfactory by raising it on blocks, finishing it with a washable surface, and using other means for a back rest. An enamel finish is quickly and easily cleaned. A good set of springs and mattress should accompany the bed. Frequently a bed can be rented or borrowed from a store if there is not adequate space or storage for it.

#### Miscellaneous Equipment

Table. A small washable table high enough to be used





Figure 19. Bedroom.  
(Federal Board for Vocational Education, 1927.)

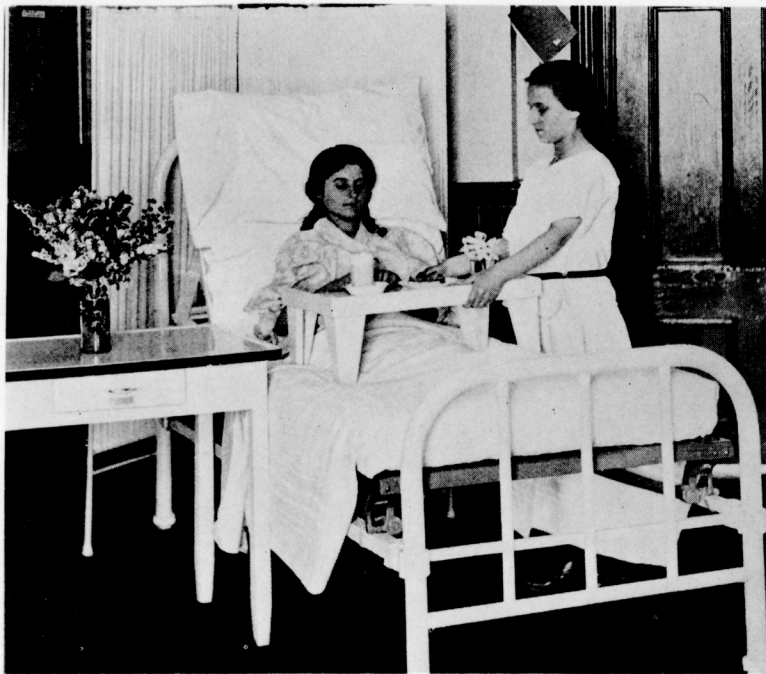


Figure 20. Bedroom for Care of the Sick.  
(Federal Board for Vocational Education, 1927.)

as a bed table should be provided. An enameled table is good. (See Figure 20 by the Federal Board for Vocational Education, 1927.)

Dresser. A simple dresser or chest of drawers will provide a storage place for linens and bedding. It should be washable.

Chairs. At least one straight washable chair is necessary. A straight chair and a small rocking chair are good to include.

Rugs. Rugs are not essential in the bedroom, and a large rug is not at all desirable. A few small rugs may be used to add to the attractiveness of the room.

#### Equipment: Kinds and Amounts

Most laboratory work in the caring for the sick is given to the class by demonstration or in groups of three or four. Table XVII gives the minimum, moderate, and maximum kinds and amounts of equipment for classes. The same amount of equipment will be necessary for any size class, with a few exceptions.

#### THE HOME ECONOMICS COTTAGE

##### General Considerations

A few Kansas high schools have taken their Home Eco-

Table XVII. Equipment for Care of Sick

Minimum		Moderate		Maximum	
Kind of Equipment	Amount	Kind of Equipment	Amount	Kind of Equipment	Amount
Bed	1	Bed	1	Bed (Hospital)	2
Mattress	1	Mattress	1	Mattress	2
Springs	1	Springs	1	Springs	2
Spring Protector	1	Spring Protector	2	Spring Protector	4
Mattress Protector	1	Mattress Protector	2	Mattress Protector	4
Pillow	2	Pillow	2	Pillow	4
Draw Sheet	1	Draw Sheet	2	Draw Sheet	3
Rubber Sheet	1	Rubber Sheet	1	Rubber Sheet	2
Linen Sheet	4	Linen Sheet	4	Linen Sheet	8
Pillow Cases	4	Pillow Cases	4	Pillow Cases	8
Blanket (Cotton)	1	Blanket (Cotton)	2	Blanket (Cotton)	4
Bed Spread (Cotton)	2	Bed Spread (Cotton)	2	Bed Spread (Cotton)	4
Towels (Turkish)	2	Towels (Turkish)	2	Towels (Turkish)	4
Towels (Face)	2	Towels (Face)	2	Towels (Face)	4
Wash Cloths	2	Wash Cloths	2	Wash Cloths	4



Table XVII (Continued)

Bedside Table	1	Bedside Table	1	Bedside Table	2
Chair (Straight)	1	Chair (Straight)	1	Chair (Straight)	2
Basin ( Large )	1	Basin (Large)	1	Basin (Large)	2
Diet Tray	1	Diet Tray	1	Diet Tray	2
Large Pitcher	1	Large Pitcher	1	Large Pitcher	2
Medicine Droppers	6	Medicine Droppers	6	Medicine Droppers	10
Single Scale Graduate (16 oz.)	1	Single Scale Graduate (16 oz.)	1	Single Scale Graduate (16 oz.)	2
Medicine Cabinet (Equipped)	1	Medicine Cabinet (Equipped)	1	Medicine Cabinet (Equipped)	1
Hot Water Bottle	1	Hot Water Bottle	1	Hot Water Bottle	2
Syringe	1	Syringe	1	Syringe	2
Bed Pan	1	Bed Pan	1	Bed Pan	2
Thermometer (Mouth)	1 for every 2 girls	Thermometer (Mouth)	1 for every 2 girls	Thermometer (Mouth)	1 for every 2 girls
		Thermometer (Rectal)	1	Thermometer (Rectal)	2
		Comb	1	Comb	2
		Brush	1	Brush	2
		Ice Cap	1	Ice Cap	2
		Nursing Bottles	1 of each type	Nursing Bottles	1 of each type

Table XVII (Continued)

	Bottle Brush	1	Bottle Brush	1
	Eye Cup (Glass)	1	Eye Cup (Glass)	2
	Bucket	1	Bucket	1
	Scales for Weighing and Measuring	1	Scales for Weighing and Measuring	1
			Chase Hospital Doll	2
			Bedside Screen	2
			Manicure Set	2
			Blanket (Cotton & Wool)	2



nomics work out of the main building and provided a cottage for instruction in this field. Figure 21 is the Home Economics cottage at Spearville, Kansas; and Figure 22 is the cottage at Frontenac, Kansas.

There are many advantages to this plan. Not all phases of home making can be taught in two or three high school rooms, so much home practice is needed to supplement the school course.

In a Home Economics cottage a real home situation is produced which lends itself well to the teaching of practically all phases of Home Economics, especially the managerial duties in a home, the care and repair of a home, furnishing and decorating, and the landscaping of the yard.

The students take much pride and interest in their Home Economics cottage and the carry-over of their learning into their own homes is much more easily and quickly accomplished.

The cottage may be used for evening classes, club meetings, and other activities. If it is heated separately from the main building, a real economy is effected.

There is a disadvantage to having a cottage if it is located very far from the high school building. The cottage should be close enough to the main building to prevent much loss of time in students passing from classes in one to classes in the other. The Home Economics teacher can also keep in closer touch with the whole school program if the





Figure 21. Home Economics Cottage at Spearville, Kansas.



Figure 22. Home Economics Cottage at Frontenac, Kansas.

cottage is close to the main building.

"At first thought one is likely to jump to the conclusion that the Home Economics cottage is too great an expense. As a matter of fact, it is an actual economy. The cost of one room in a good brick school building varies from \$5,000 to \$10,000 according to the type of construction used. Thus, a two room department in a brick school building costs at least \$10,000 which sum would build a very spacious and attractive cottage." (Federal Board for Vocational Education, 1927.)

There is an educational value in having the vocational agriculture boys help plan and build the cottage and the Home Economics girls help with the furnishing and decorating, and there will be a still greater saving. Students' services should not be exploited in order to save money, and so their work should be only of the kind and for the length of time that will prove of a real educational value to them.

#### Rooms and Equipment

A foods laboratory and a clothing laboratory should always be provided in the Home Economics cottage or in the main high school building in order to carry on class instruction in these activities. The other rooms should be typical of a real home situation and should consist of at least a kitchen, dining room, living room, bedroom, bathroom, and

storage rooms. A separate room or the basement may be fitted up for a laundry room. The dining room and living room may be combined depending on the type of building. The living room may be furnished so it can be used for a clothing laboratory. This plan has the advantage of permitting a more socialized method of teaching.

It is important that the whole Home Economics cottage be equipped to represent the standards maintained in a large number of the good homes in the community.

The equipment for the foods and clothing laboratories, kitchen, dining room, laundry room, and bedroom will be similar to that discussed for high school rooms. (See pages 39, 77, 86, 96, and 102).

The bathroom should contain a lavatory, stool, bathtub, and a medicine cabinet. Part of the supplies to be used in teaching the unit on the care of the sick can be kept in the medicine cabinet.

The living room furniture should not be too expensive. It may consist of a davenport or settee, a few chairs, two or three small rugs, an end table or other small table, a magazine stand, perhaps a victrola, a reading lamp, and a few pictures. Some of the chairs or small tables may be finished or refinished by the girls. A fireplace in the living room adds much to its cheerfulness and attractiveness.



## REARRANGED LABORATORIES

### Foods Room

The types of arrangements for equipment in foods rooms and their relative advantages and disadvantages have been discussed. (See pages 71 to 72.) The conclusion to be drawn from that discussion was that the unit kitchen and unit desk types of arrangement were considered best from the standpoint of pupil efficiency, and that such arrangements came the nearest to representing home conditions. In the past, however, the hollow square and parallel room arrangements have been most widely used.

Many schools would like to rearrange their foods equipment into unit desks or unit kitchens, but some feel they would have to install much new equipment which they can not afford. The plumbing in a room offers a problem, too, when it comes to rearranging the room, for changing plumbing fixtures is inconvenient as well as costly. By carefully studying the size and shape of the room, however, a better arrangement can often be planned by using the same plumbing fixtures and little or no new equipment. Sometimes the present equipment may be so undesirable that the purchase of efficient new equipment will be a real saving in the long run.

Figure 23 is a picture of one of the foods laboratories at the Kansas State Agricultural College. Notice the old type of hollow square arrangement. Figure 24 is a picture of the same laboratory after it had been rearranged into unit kitchens. The same plumbing system was used in both. The sinks in all units but one were new.

### Clothing Rooms

Many times not much attention is given to the arrangement of equipment in a clothing laboratory. The equipment may be placed inconveniently for the student to do her work efficiently, but the most common fault is the improper placement of equipment in relation to the lighting.

Figure 25 is a floor plan of a clothing laboratory showing the present arrangement. Notice that while the students are at work all of the light comes over their right shoulders. Since most students use their right hands more than their left, this means that their right arms will usually be casting a shadow on their work. Figure 26 is a floor plan of the same room showing the equipment arranged so that it is lighted from the left.

The rearrangement of equipment in a clothing laboratory is not usually a difficult problem. A little careful thought and time spent in rearranging will often mean a much more



Figure 23. Foods Laboratory at the Kansas State Agricultural College. Hollow Square Arrangement.





Figure 24. Same Foods Laboratory at the Kansas State  
Agricultural College. Unit Kitchen Arrangement.

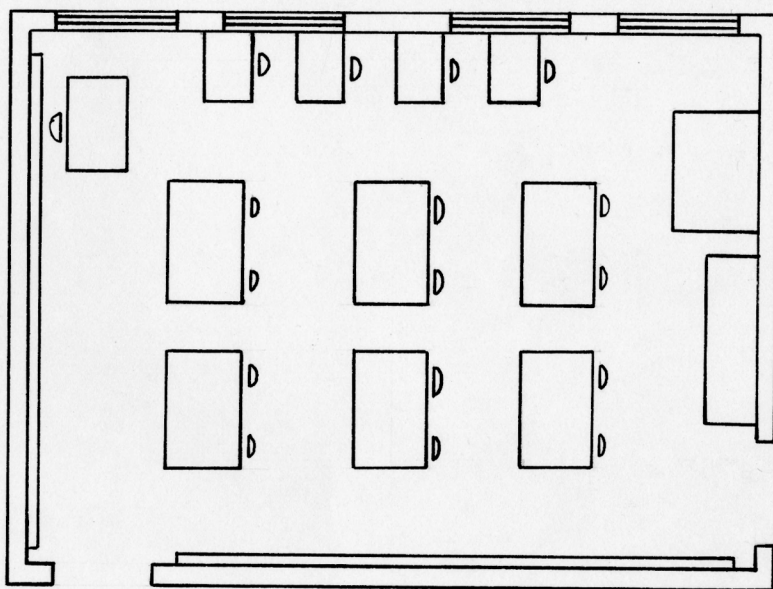


Figure 25. Clothing Laboratory  
Showing Present Arrangement.

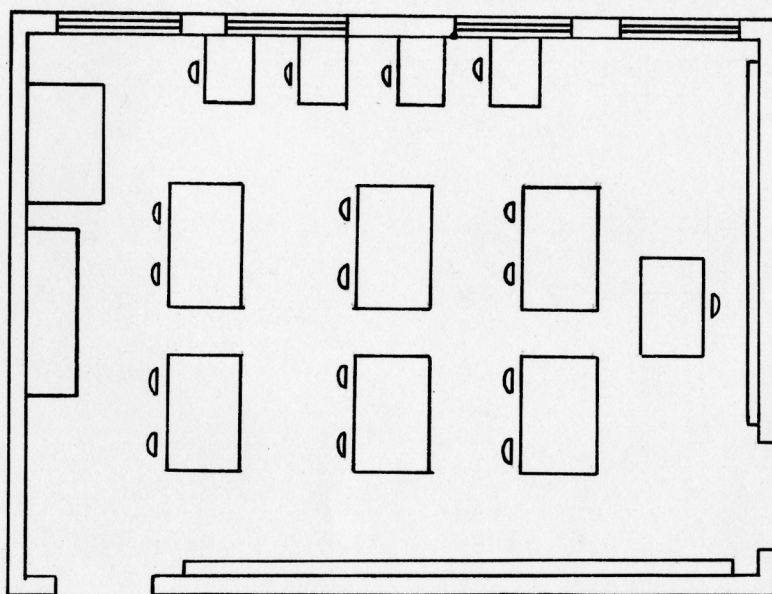


Figure 26. Same Clothing Laboratory Showing  
a Suggested Rearrangement.



pleasant room and more efficient work on the part of the students.

## VOCATIONAL HOME ECONOMICS

### General Considerations

An increasing number of Kansas high school are replacing their general Home Economics course with Vocational Home Economics. Vocational Home Economics recognizes in every girl a potential home maker. The purpose of the course is to train the girl in the practical skills and the managerial duties of the home, to develop within her an appreciation for beauty and appropriateness, and to help her set up good standards for family relationships.

The Vocational Home Economics course consists not only of Home Economics subjects but also includes those sciences and arts most closely related to the home and the health of its members. When they are taught by the Home Economics teacher, they truly help to explain, enrich, and broaden the whole field of Home Economics.

Vocational Home Economics is taught on the half day plan. That is, two-thirds of the half day is devoted to teaching the Home Economics subject and one-third of the half day is given to teaching a related subject.

There is very little difference between the subject matter included in the foods, clothing, and family unit courses in the general Kansas Two-Year Course of Study and than included in the Home Economics subjects in the suggested plan for Vocational Home Making. Neither does there need to be much difference in the method of teaching the two courses.

The main differences between the Kansas Two-Year Course of Study and the plan for Vocational Home Economics are that the half day gives more time to the teaching of Home Economics and the course also includes related subjects.

#### Additional Equipment

A high school that is well equipped for the successful teaching of the Kansas Two-Year Course of Study will find that it can install Vocational Home Economics with very little change in its equipment. All that has been said concerning kinds and amounts of equipment will hold true for the Vocational Home Economics set-up. Additional equipment will probably be necessary for teaching the related subjects. It may be possible, however, for the Home Economics teacher to use the regular science equipment from the other departments for the related general science and physiology.

The equipment used for teaching other Home Economics subjects will probably be adequate for teaching home living.

Equipment necessary for teaching related art will include paints, brushes, India ink, spoon bill pens, and good illustrative material. The following list of equipment for related general science and related physiology has been recommended (Thompson, 1927):

Related Physiology:

Charts of the Human Body

6 magnifiers

1 box slides

1 box cover glasses

1 box medicine droppers

1 dissecting set

Bunsen burners or alcohol lamps

Test tubes

Beakers

Evaporating dishes

Flasks

Petri dishes

2 glass funnels

1 package filter paper

Litmus paper

Snellen's Eye Test Chart

Reagents and supplies may be obtained from chemistry laboratory as needed.



### Additional Equipment Desirable:

Models of parts of the body

1 compound microscope for each six pupils

Scapula and dissecting needles for each student

Harvard trip balance

Test tube racks

Test tube holders.

### Related General Science

Elaborate equipment for teaching Related Science is not necessary. Much of the equipment needed will be found in the foods laboratory and some of it may be collected by members of the class. The science departments in the school will probably be able to provide the equipment and chemicals which are needed. Common reagents such as acids, iodine, ammonia, etc. may be obtained in small quantities at the local drug stores. If there is no well equipped science department in school, the following equipment should be provided:

Test tubes

Test tube racks

Beakers

Petri dishes

Flasks

Pipette

Thistle tubes  
One-hole rubber stoppers  
Two-hole rubber stoppers  
Glass tubing  
Litmus paper  
Ring stands  
Wire gauze  
Compound microscope  
Slides and cover glasses  
Funnels  
Thermometers  
Prism  
Glass rods  
Bunsen Burner

### CONCLUSIONS

This study has been made in order to offer helpful suggestions to those who are concerned with planning and equipping Home Economics rooms in Kansas high schools at the present time. From the study the following conclusions have been made:

1. The successful teaching of Home Economics subjects depends much on using well planned rooms that are furnished with adequate and well arranged equipment.

2. Many high school Home Economics rooms are unattractively finished, poorly lighted and ventilated, and inconveniently located in the building in relation to the other high school rooms.
3. The equipment in most high schools is poorly arranged and inadequate for the successful teaching of the Kansas Course of Study in Home Economics and the Kansas Course of Study for Vocational Home Making.
4. Home Economics school equipment should represent desirable standards that are attainable in the homes of the community, but it should not be more expensive than the community can afford.
5. From the standpoint of cost the equipment used for teaching Home Economics subjects is expensive. The equipment, however, is necessary for developing in a student an appreciation of home, good standards for home making, and skills in performing home activities. The importance of such training for future home makers can not be over-emphasized. For these reasons the cost of necessary equipment for Home Economics rooms is justified.
6. Home Economics as a subject is constantly changing in its scope, purpose, standards, subject matter, and method of presentation so any plan for school



equipment can not be final but should constantly be revised to meet the changing program.

#### ACKNOWLEDGMENT

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