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ABSTRACT

This teacher's guide on laundry is one of a series of six designed for the employment orientation program for special needs students at the Gloucester County Vocational-Technical School in Sewell, New Jersey. The series includes laundry, hospitality, sewing, basic business, foods, and beauty culture. Each guide contains lesson plans consisting of objectives, subject matter covered, audiovisual aids, demonstrations, student activities, and evaluation suggestions. The 12 lessons in the laundry unit are (1) Laundry Work, (2) What Do We Wash?, (3) Selecting Washable Clothing, (4) Sorting and Pretreating, (5) Soaps and Detergents, (6) Enzymes and Bleaches, (7) Water Softening Agents and Fabric Softeners and a Quiz on Laundering, (8) Starches and Fabric Finishes, (9) Reading Package Directions and Using Correct Water Temperatures, (10) Your Washer and Choosing the Correct Wash Action, (11) Rinsing and Drying; Hand Laundering, and (12) The Laundry Slip and Laundry Unit Test. Charts and masters for projectuals are also included. (HD)

State of New Jersey
Department of Education
Division of Vocational Education

LAUNDRY

— A TEACHER'S GUIDE TO AN EMPLOYMENT ORIENTATION COURSE FOR SPECIAL NEEDS STUDENTS

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CURRICULUM LABORATORY

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FOREWORD

This manual is one of a series of six designed for the Employment Orientation program at the Gloucester County Vocational Technical School. The school is a shared-time facility that has one group of students for approximately 3 hours in the morning and another group for approximately 3 hours in the afternoon. The Employment Orientation program is taught in six discrete units so that additional students may be accommodated if vacancies occur during the year.

The six areas covered are:

Laundry
Hospitality
Sewing
Basic Business
Foods
Beauty Culture

At the end of the year, assessments are made so that students can be mainstreamed into a regular program the following year. Therefore our major goal is to try to mainstream each of the students in the Employment Orientation program into regular vocational shop areas. A secondary goal is to acquaint the students with specific types of employment in a particular trade or industry, so that the choice of a vocational shop may be based on the realities of the world of work as well as on the aptitudes of the particular student.

All of the Special Needs students are classified by their district Child Study Team and are screened for admission into the Employment Orientation Program by the Special Needs Department at Gloucester County Vocational-Technical School.

This curriculum project includes daily class lesson plans, consisting of objectives, subject matter covered, audiovisual aids,demonstrations, student activities, and evaluation suggestions. The teacher is urged to make handouts out of all the audiovisuals and charts.

Some of the instructional material suggested may, of course, prove to be too difficult for some of the students. The teacher must, as always, tailor the material to the needs of the individual. Conversely, a large number of student activities have been incorporated into the program for those students who may progress faster than others.

A math program accompanies these units to stress the necessity for a basic understanding of practical math. For example, linear measurement is taught during the sewing unit, and weights and measures is taught during the foods unit.

In some areas, particularly Beauty Culture, the teacher will not expect complete memorization of all details covered, but should stress that these are included in the course content of a regular vocational course. The purpose is to give the student a realistic picture of what the regular course would be like and what would be expected if that student chose that course to be mainstreamed into the following school year.

Francine Grubb

TABLE OF CONTENTS

	Page
Foreword	i
Objectives of the Laundry Unit	iii
References	iv
Lesson 1 - Laundry Work	1
Lesson 2 - What Do We Wash?	2
Lesson 3 - Selecting Washable Clothing	4
Lesson 4 - Sorting and Pretreating	6
Lesson 5 - Soaps and Detergents	8
Lesson 6 - Enzymes and Bleaches	10
Lesson 7 - Water Softening Agents and Fabric Softeners	12
Quiz on Laundering	14
Lesson 8 - Starches and Fabric Finishes	15
Lesson 9 - Reading Package Directions and Using Correct Water Temperatures	16
Lesson 10 - Your Washer and Choosing the Correct Wash Action	18
Lesson 11 - Rinsing and Drying; Hand Laundering	20
Lesson 12 - The Laundry Slip	22
Laundry Unit Test	23
Masters for Projectuals and Charts	25-75

Objectives of the Laundry Unit

Upon the completion of this unit, the student will be able to:

1. Describe various jobs in the laundry industry.
2. Demonstrate good laundering procedures.
3. Select and use the proper laundry products for the job.
4. Show skill in selecting well-constructed, washable clothing.
5. Follow directions on garment tags, on product packages, and in laundry-equipment handbooks.
6. Use laundry equipment properly.
7. Select the proper water temperature for the specific job.

References

Many thanks to:

Miss Jean Learn
Supervisor, Educational Services
Proctor and Gamble Company
P.O. Box 14009
Cincinnati, Ohio 45214

"Lots About Laundering", a teaching aid by Procter and Gamble

Filmstrip:
"Are You Looking Ahead?" Series
"So You Want To Work in a Laundry?"
Eye Gate House
Jamaica, New York 11435

Woolite Leaflet and free samples
Boyle-Midway, Inc.
New York, N.Y. 10017

Maytag Encyclopedia of Home Laundry, 4th Ed.
Jean LemMon and Charlotte Garner
Consumer Information Center
The Maytag Co.
Newton, Iowa 50208

Objectives

At the conclusion of this lesson the student will be able to:

Explain the importance of the laundry industry.
Differentiate between those jobs in the laundry field that tend to be held by men and those that tend to be held by women.

Method

A. Lecture - discussion

1. Introduction to Eye Gate filmstrip
2. Post-film questions and discussion

B. Audiovisual

Eye Gate filmstrip "So You Want To Work in a Laund-

C. Demonstration - none

Teacher preparation

Get filmstrip and projector.

Student activity

A. Students will list different jobs in the laundry industry. They will then check those areas most common to men and those most common to women.

B. Students will mark laundry items with special marking pens for each area in the school laundry.

Evaluation

A. Teacher will evaluate students' understanding of the industry.

B. Teacher will evaluate neatness of students' marking of the laundry.

Objectives

At the conclusion of this lesson the student will be able to:

- Explain why, where, and how we wash clothing.
- Determine how often clothes should be washed and what factors determine this.
- Differentiate between different fabrics and know some important characteristics of each major fabric.

Method

A. Lecture – discussion

1. Why do we wash clothes?
   a. To get them clean (free of dirt)
   b. To remove odors
   c. To remove wrinkles and keep them looking nice
   d. To save money by keeping old clothes looking at their best
   e. To make us look neat, attractive, and well-groomed

2. Where do we wash clothes?
   a. At home in the laundry room, basement, kitchen, or bathroom
   b. At a coin-operated laundry
   c. At a commercial laundry
3. How are clothes washed at home?
   a. In a washing machine (automatic or wringer)
   b. By hand in a sink, laundry tub, dishpan, or bathrub.
4. How often are clothes washed? Factors include –
   a. Size of family
   b. Amount of load to be washed
   c. Amount of clothing soil
   d. Fabric durability
5. Major natural fibers
   a. Definition of "fiber"
   b. Definition of "natural fiber"
   c. Major natural fibers, their common uses and washing tips (Chart 1a)
6. Major synthetic (man-made)fibers
   a. Definition of "synthetic fibers"
   b. Major synthetic fibers, their common uses and washing tips (Chart 1b)

B. Audiovisuals

1. A.V. 2a – What Do We Wash?
2. A.V. 2b – Matching quiz on fibers

3. Chart 2a Major Natural Fibers
4. Chart 2b Major Synthetic Fibers

C. Demonstration none

Teacher preparation

A. Gather lecture notes.
B. Get overhead projector and A.V. materials.
C. Gather materials needed for student activity.

Student activity

A. Teacher will fill in A.V. 2a, What Do We Wash? - based on students' responses.

B. Students will make charts matching scraps of fibers with the characteristics of each. Each student will make two charts: one on synthetic fibers and one on natural fibers.

Evaluation

A. Students will be graded on their charts. Grading will be determined by neatness, accuracy, and creativity.

B. Verbal quiz will be given, using A.V. 2b.

Objectives

Upon the completion of this lesson the student will be able to:

Interpret garment labels.
Explain the eight basic steps to good laundering.
Determine some possible causes of common laundry problems.
Show the effect of excessive agitation on woolen fabric.

Method

A. Lecture discussion

1. Things to consider when buying an item:
   a. How will the item be used?
   b. How dirty is it likely to get?
   c. Are special cleaning procedures necessary to get it clean?
2. Other things to think about or do are:
   a. Look for good construction (seams, hem, stitching, plaids, zipper).
   b. Examine fabric (rips, flaws, dye, snaps).
   c. Is the store reliable?
   d. Study care-label for instructions.
3. Federal Trade Commission Labeling Rule
4. The Consumer Care Guide for Apparel (Chart 3a)
5. Flame-retardant sleepwear – size 0 to 6x
6. Eight basic steps to good laundering
   a. Sort carefully.
   b. Pretreat stains and heavily soiled areas before washing.
   c. Use correct wash temperature.
   d. Use right kind and amount of washing product
   e. Know your washer and how to use it.
   f. Use correct washing action.
   g. Rinse items thoroughly.
   h. Dry clothes properly.
7. Common laundry problems and their causes (A.V. 3d)

B. Audiovisuals

1. A.V. 3a – What To Look For When Selecting Washable Clothing.
2. A.V. 3b – Let's Make a Care Label
3. A.V. 3c – 8 Basic Steps to Good Laundering
4. A.V. 3d – Laundry Problems and Their Causes
5. Chart 3a – Consumer Care Guide for Apparel

C. Demonstration

Teacher and students will perform demonstration #3.1 to illustrate the effect of excessive agitation on woolen fabric.

Teacher preparation

A. Gather lecture notes
B. Get overhead projector and A.V. materials.
C. Get materials for demonstration #3.1.
D. Get materials for student activity

Student Activities

A. Students will suggest answers for A.V. 3a, What To Look For When Selecting Washable Clothing.

B. Students will make a care label, using the correct language. It will be graded on neatness, accuracy, and creativity.

C. Students will carry out demonstration #3.1 and draw conclusions from it.

Evaluation

A. Care labels will be reviewed for basic understanding and proper wording.

B. Conclusions from the demonstration will be discussed in depth.

Objectives

At the conclusion of this lesson the student will be able to:

- Recognize the need for sorting clothes by color, construction, type of fabric, amount of soil, and size of item.
- Demonstrate the different methods of pretreating.
- Identify the different products used in pretreating.
- Explain the proper treatments for specific stains.

Method

A. Lecture - discussion

1. What is pretreating and why must we use this method on difficult stains?
2. Ways of pretreating
   a. Soaking
   b. Applying detergent or bar soap
   c. Using special treatments
3. Three main types of stains
   a. Greasy
   b. Nongreasy
   c. Combination
4. General rules for stain removal (Chart 3a)
5. Supplies needed for stain removal
   a. Bleaches
   b. Detergents
   c. Soaps
   d. Solvents
6. Store and use stain removers safely.
7. Know the fabric you are working with.
8. Stain removal
   a. Sometimes washing can remove a stain.
   b. Sometimes enzymes or oxygen bleach is needed.
   c. Pre-soaking may help in some cases.
   d. Special stains and their removals (Chart 4b)

B. Audiovisuals

1. A.V. 4a Preparing Laundry
2. A.V. 4b Which Item Doesn't Belong in This Load?
3. A.V. 4c Ways of Pretreating
4. Chart 4a Stain Removal Chart
5. Chart 4b Treatments for Special Stains

C. Demonstration

Teacher will have students perform demonstration #4.1 to illustrate how to test colorfastness of colored fabrics.

Teacher preparation

A. Gather notes on lecture material.
B. Get overhead projector and A.V. materials.
C. Be sure all demonstration materials are together.

Student activities

A. Students will perform demonstration.
B. Students will examine stains and suggest removal techniques.

Evaluation

A. Conclusions should be drawn from the demonstration. Discussion will follow and participation of all is expected.

B. Teacher will verbally quiz students on some major common stains and their proper removal.

Objectives

At the conclusion of this lesson, the student will be able to:

Explain what different types of laundry products are available and the purposes of several types.
Differentiate between soaps and detergents.

Method

A. Lecture - discussion

1. Introduce several types of products and discuss the purposes of each. (A.V. 5a and 5b
2. How soaps and detergents work (A.V. 5c)
3. Detergents (A.V.5d
   a. All purpose
   b. Light duty
4. Soaps (A.V. 5e
   a. All purpose
   b. Light duty and bar soaps
5. How much soap or detergent is needed to do the job? Factors include
   a. Water hardness
   b. Type of washer
   c. Amount of soil on clothes
   d. Size of load

B. Audiovisuals

1. A.V. 5a Detergents and Other Products
2. A.V. 5b More Products
3. A.V. 5c Three Basic Functions of Detergents
4. A.V. 5d Detergents
5. A.V. 4e Soaps
6. A.V. 5f How Much Detergent To Use?

C. Demonstration

Students will perform demonstration #5.1 to illustrate how soaps and detergents make water wetter (reduce surface tension).

Teacher preparation

A. Gather notes on lecture material.
B. Get overhead projector and A.V. materials.
C. Gather all demonstration materials.

Student activities

A. Students will perform demonstration.
B. Students will "select" a laundry detergent from a shelf, as in a supermarket, and tell the class why they chose that particular product.

Evaluation

A. Students will supply answers to A.V. 5f.
B. Student participation in the demonstration.

Objectives

At the conclusion of this lesson the student will be able to:

Describe how enzymes work in laundry products.
Recognize and describe the functions of the three types of bleaches.
Differentiate between fabrics that can and fabrics that cannot be bleached.

Method

A. Lecture - discussion

1. What are enzymes?
2. Why do laundry [illegible]ucts contain enzymes?
3. What are the advantages of enzyme products?
4. How do enzymes work? (A.V. 6a)
   a. A molecule that is our main cleaning agent in a detergent.
   b. The molecules found a stubborn stain they can't budge.
   c. This is a complex stain that is "locked" into the fabric.
   d. The enzyme is the "key" to the problem.
   e. They rapidly open the locks to dissolve the stain.
   f. Now, the detergent ingredients can perform their function.
5. Three basic bleaches for home use
   a. Liquid-chlorine type
   b. Dry-chlorine type
   c. Dry-oxygen type
6. Which bleach should be used on which fabric?

B. Audiovisuals

1. A.V. 6a — How Enzymes Work
2. A.V. 6b — Can I Use Chlorine Bleach on These Fabrics?
3. A.V. 6c — Which Bleach Should You Use?

C. Demonstration

1. Students will work with the teacher's help on demonstration #6.1 to illustrate which fabrics can and which cannot be bleached with a chlorine bleach.
2. Students and teacher will work on demonstration #6.2 to test the bleach-fastness of colored fabrics.

Teacher preparation

A. Gather lecture notes.
B. Get overhead projector and A.V. materials.
C. Gather materials for demonstrations 6.1 and 6.2.

Student activities

A. Students will work on the two demonstrations.
B. The students will fill in the answers to A.V. 6b from the following list:

handkercheifs	white undershirt
silk scarf	wool hat set
printed apron	white cotton uniform
nylon/spandex swim suit	

C. Students will fill in answers on A. V. 6c.

Evaluation

A. Teacher will evaluate students' understanding through demonstrations.
B. Teacher will check student activities B and C.

Objectives

At the conclusion of the lesson the student will be able to:

- Distinguish between hard water and soft water.
- Demonstrate how hard water can be softened for laundry.
- Use fabric softeners correctly.

Method

A. Lecture - discussion

1. Signs that indicate hard water (A.V. 7a)
2. What is hard water?
3. Why hard water should be softened for laundry
4. How to soften hard water with ---
   a. detergents
   b. packaged water softeners
   c. mechanical water softeners
5. Fabric softeners - different types
6. What do fabric softeners do?
7. How to use fabric softeners

B. Audiovisuals

1. A.V. 7a - How To Recognize Hard Water
2. A.V. 7b - What Does Fabric Softener Do for These Items?

C. Demonstration

Students and teacher will perform demonstration #7.1 to illustrate what is meant by static electricity and show that fabric softener will eliminate this problem. The second part of the demonstration illustrates how fabric softener actually makes the clothing feel soft.

Teacher preparation

A. Gather lecture notes
B. Get overhead projector and A.V. materials
C. Gather demonstration materials.

Student activity

A. Students will work on demonstration.
B. Students will fill in answers on A. V. 7b.

Evaluation

A. Performance in demonstration.
B. Correctness of answers on work on activity B.

Quiz on Laundering

Name: _____

1. If you have hard water, you must use:
   a. soaps
   b. detergents
   c. fabric softener

2. In the experiment, the detergent:
   a. bleached the fabric
   b. smelled good
   c. made the water "wetter"

3. If you get gum on a garment, you must:
   a. presoak in cold water
   b. apply ice
   c. use K2R

4. In a front-loading washer, you use a
   a. normal-sudsing detergent
   b. low-sudsing detergent
   c. medium-sudsing detergent

5. For a coffee or tea stain, you use:
   a. cold water
   b. warm water
   c. hottest water the fabric will take

Objectives

At the conclusion of this lesson the student will be able to:

--Differentiate between the different forms of starch that are available.
--Recognize the purposes of starching

Method

A. Lecture discussion

1. Starch is used because:
   a. It restores the original body or crispness to fabrics.
   b. It gives a fresh, smooth appearance to fabrics.
   c. aids in soil removal.
2. Form . of starch and how they are used. (A.V. 8a)
3. General starching hints
   a. Starching in a sink or tub
   b. Starching in a washer
   c. Spray starching

B. Audiovisual

A.V. 8 - Forms of Starch

C. Demonstration

Students will perform demonstration 8.1 to illustrate the body and stiffness which starches give to fabrics. Each student will perform the demonstration individually.

Teacher preparation

A. Gather lecture material
B. Get overhead projector and A.V. materials.
C. Gather materials needed for demonstration.

Student activities

A. Students will perform demonstration individually.
B. Class will discuss which way of starching would be best for a particular situation. Teacher will give students "situations", for example, a nurse's cap (starch in sink), shirts (washer), curtains (washer), shirt collar only (spray starch).

Evaluation

A. Participation in class will be evaluated.
B. Performance on the demonstration project.

Objectives

At the conclusion of this lesson the student will be able to:

- Read package directions.
- Follow the directions when using laundry products.
- Use the correct water temperature for each fabric.

Method

A. Lecture - discussion

1. Facts that can be found on the product package
2. Importance of reading the directions and following them correctly
3. Why problems occur with products
   a. Carelessness
   b. Failure to read the directions
4. Wash-water temperature directly affects:
   a. Cleaning
   b. Wrinkling
   c. Unstable dyes
   d. Durability of fabric finishes
5. When to use what temperature (Chart 9a)
6. Rinse temperatures

B. Audiovisuals

1. A.V. 9a - Read Directions Carefully
2. A.V. 9b - Water Temperatures
3. Chart 9a - Temperature Guide
4. A.V. 9c - Which Wash Temperature?

C. Demonstration - none

Teacher preparation

A. Gather lecture materials.
B. Get overhead projector and A.V. materials.
C. Get materials for student activities.

Student activities

A. Using different boxes from detergents, students will supply answers for A. V. 9a.

B. Students will supply answers to A. V. 9b, Water Temperatures

C. Students will pour what they think is one cup of detergent onto a sheet of waxed paper. Then pour this amount into a measuring cup to see how accurate they were.

D. Compare a standard measuring cup with a coffee cup, drinking glass, etc.

Evaluation

Verbal quiz will be given, using A. V. 9c.

Objectives

At the conclusion of this lesson the student will be able to:

- Recognize the five basic types of washers and how they operate.
- Determine the correct washing action for the fabric.

Method

A. Lecture – discussion

1. Five basic types of washers
   a. Top-loading automatic
   b. Front-loading automatic
   c. Combination washer-dryer
   d. Compacts and portables
   e. Wringer washers
2. Basic types of washers and their characteristics (Chart 10a)
3. In selecting the proper agitation, it is necessary to consider:
   a. fiber content
   b. garment construction
   c. amount of soil
4. Proper washing action for certain kinds of loads. (Chart 10b)

B Audiovisuals

1. A.V. 10a – 5 Basic Types of Washers
2. A.V. 10b – Types of Washing Action
3. A.V. 10c – How Much Washing Action Is Needed?
4. Chart 10a – Basic Types of Washers
5. Chart 10b – Proper Washing Action

C. Demonstration

1. Teacher and students will perform demonstration #10.1 to illustrate how washing action affects fraying of fabrics.
2. Demonstration of features on class washing machine.

Teacher preparation

A. Gather lecture notes.
B. Get overhead projector and A.V. materials.
C. Gather materials needed for demonstration

Student activities

A. Students will perform demonstration #10.1.
B. Students will discuss the various features available on automatic washers.

Evaluation

A. Performance in demonstration
B. Verbal responses to A.V. #10c.

Objectives

At the conclusion of this lesson the student will be able to:

- Follow the necessary directions for rinsing.
- Use the dryer in the proper manner.
- Launder clothing correctly by hand.

Method

A. Lecture - discussion

1. Clothes are rinsed to:
   a. remove soiled wash water
   b. remove suds
   c. remove any lint that may have been shed
2. Improperly rinsed clothes may become stiff and dull-looking.
3. Basic directions for rinsing (Chart 10a)
4. Products that may be added to the rinse
   a. fabric softener
   b. bluing
   c. water softener
5. Several ways to dry clothes (A.V. 11b)
   a. automatic dryer
   b. line drying
   c. flat drying
6. Advantages and disadvantages of each way of drying (Chart 11b)
7. Basic tips for drying in a dryer, on a line, and on a flat surface.
8. Reasons for hand laundering
   a. no washer available
   b. extra-gentle care required
   c. too few items for a full wash load
   d. when traveling
9. Pointers for hand laundering (A.V. 11c)
10. Tips for special items
    a. wool sweaters
    b. cloth gloves
    c. hosiery
    d. slips, underwear, lingerie

B. Audiovisuals

1. A.V. 11a – Why Rinse Clothes?
2. A.V. 11b – Drying Methods

3. A.V. 11c — Points To Remember — Hand Laundering
4. Chart 11a — Basic Directions for Rinsing
5. Chart 11b — Ways To Dry Clothes

C. Demonstration

Teacher will demonstrate proper hand laundering techniques. Students will follow procedure on sweater or other article(s) brought from home.

Teacher preparation

A. Gather lecture materials.
B. Get overhead projector and A.V. materials.
C. Get materials needed for demonstration.
D. Get copies of pamphlet put out by Woolite.
E. Have students bring items from home for hand washing.

Student activities

A. Wash article(s) brought from home.
B. Discussion, answering questions on A.V. 11a on why we rinse clothes.
C. Discussion, answering questions on points to remember about hand laundering (A.V. 11c)

Evaluation

Proper hand-laundering techniques

Objectives

At the conclusion of this lesson the student will be able to:

Fill out the laundry slips used in the laundry room at school.
Follow the basic procedure for accepting laundry and completing it in the school laundry.

Method

A. Lecture - discussion

1. How to fill out the laundry slip (in triplicate) (A.V. 12)
2. Steps in accepting laundry.
   a. Sort laundry
   b. Count laundry
   c. Fill out slip
   d. Give one duplicate slip to person who brought laundry. (Be sure pick-up date is on it.)
3. Put clothes in washer.
4. When laundry is folded and counted, check it against the slip to be sure it is all accounted for.
5. Mark slip "O.K." and put duplicate slip with laundry. Keep original slip for records.

B. Audiovisual

1. A.V. 12 – Laundry Request Slip

Teacher preparation

A. Gather lecture notes
B. Get overhead projector and A.V. materials.

Student activity

A. Students will practice filling out laundry slips.
B. Students will practice entire procedure with actual school's laundry in laundry room.

Evaluation

Students will be checked on performance in student activities.

LAUNDRY UNIT TEST

NAME_____

1. One of the natural fibers is:
   a. nylon
   b. wool
   c. elastic
   d. polyester

2. One of the man-made fibers is:
   a. cotton
   b. rayon
   c. wool
   d. silk

3. If the care label says "*no bleach*" it means:
   a. do not use chlorine bleach
   b. do not use oxygen bleach
   c. use any bleach
   d. do not use any bleach

4. If your wool sweater shrinks it is because:
   a. you used cold water
   b. too much agitation
   c. too much detergent
   d. you added bleach

5. Give 3 steps in preparing laundry for the washer:
   1._____
   2._____
   3._____

6. Which item should *not* be in this load?
   a. a pink slip
   b. a silk nightgown
   c. a white sweater
   d. a red striped shirt

7. The best way to remove a lipstick stain is:
   a. soak in hot water
   b. apply ice to the stain
   c. soak in presoak detergent
   d. wet and apply bar soap

8. Circle the 3 things detergent does:
   a. makes the water wetter
   b. grabs onto the soil
   c. makes the water harder
   d. pulls the soil into the water

9. In a front-loading washer you use:
   a. normal-sudsing detergent
   b. low-sudsing soap
   c. low-sudsing detergent
   d. medium-sudsing detergent

10. For a soda stain you use:
    a. cold water
    b. warm water
    c. hottest water the fabric will take
    d. bar soap and cold water

11. Which bleach do you use, oxygen or chlorine?
    a. girdles _____
    b. socks _____
    c. printed blouse _____
    d. flowered towels _____
    e. white T-shirts _____

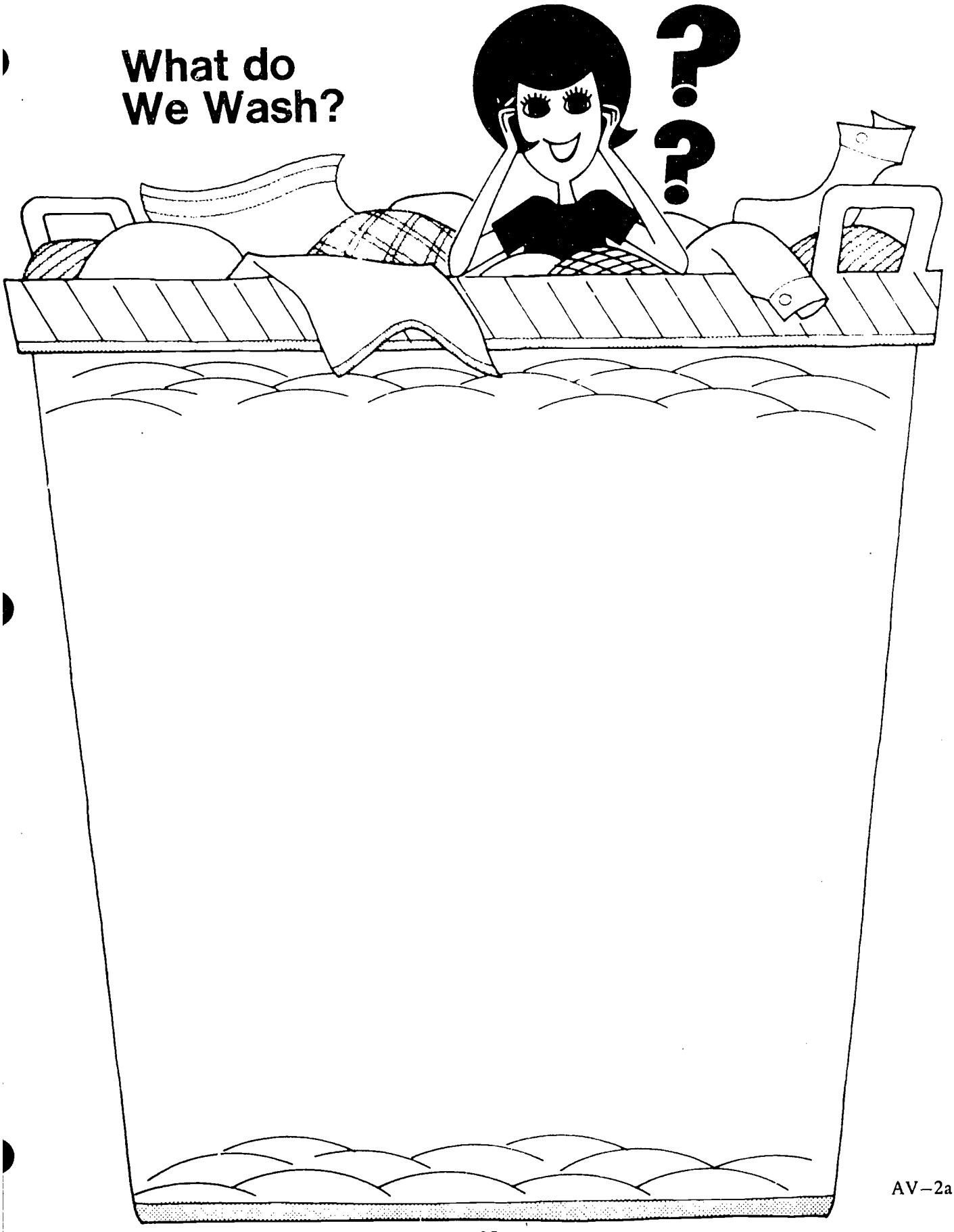
12. Which *doesn't* starch do?
    a. make the fabric crisp, like new
    b. make the dirt come off easier
    c. soften the water
    d. make the fabric smoother for ironing

13. Name 2 places where you can see if you have hard water:
    1. _____
    2. _____

14. Fabric softener does *not*:
    a. remove static cling
    b. make the clothes fluffy
    c. take the wrinkles out
    d. soften the water to make it wetter

15. Circle 3 ways to dry clothes:
    1. Line-dry
    2. Shake dry
    3. Use automatic dryer
    4. Lay flat

16. Write 2 things to remember when doing hand laundry from the list that the teacher gave you:
    1. _____
    2. _____



AV–2a

MATCH THE RIGHT FIBER WITH ITS COMMON USE:

1. Nylon	a. girdles, ski pants
2. Wool	b. draperies
3. Cotton	c. knit pants & suits
4. Polyester	d. slips, nightgowns
5. Spandex	e. sweaters, blankets
6. Glass	f. blouses, sheets, and towels

MAJOR NATURAL FIBERS

Fiber	*Outstanding Characteristics*	*Laundry Care*
Cotton *Common Uses:* Towels Sheets Pillowcases T-shirts Knitted sportswear Dresses Diapers	Absorbent Very durable Versatile Wrinkles easily unless treated to resist wrinkling	Washes easily – machine wash; tumble dry. Use hot water for whites and colorfast items. Bleachable with chlorine bleach, but test colors for bleach-fastness. Iron at hot temperature.
Linen *Common Uses:* Dresses Suits Tablecloths Handkerchiefs	Interesting texture Very absorbent Wrinkles easily unless treated to resist wrinkling	Machine wash; tumble dry. Use hot water for whites. Bleachable with chlorine bleach, but test colors for bleach-fastness. Use hot iron; do not press in sharp creases.
Silk *Common Uses* Blouses Dresses Suits Scarfs	Natural luster Feels soft, usually smooth Drapes well Weakened by sunlight and perspiration	Follow label instructions. If garment can be hand- or machine-washed, use great care. Use warm water. Never use chlorine bleach. Iron at low temperature or with steam.
Wool *Common Uses:* Sweaters Socks Sportswear Dresses Suits Blankets	Warm and comfortable Sheds wrinkles well Very absorbent Shrinks and felts if given too much washing agitation	Same as Silk

Chart 2a

MAJOR SYNTHETIC FIBERS (1)

FIBER	*Outstanding Characteristics*	*Laundry Care*
Acetate/Triacetate *Common Uses:* Dresses Blouses Backing for bonded fabrics (acetate tricot) Drapery and upholstery fabrics	Silk-like appearance Drapes well. Poor abrasion (rubbing) resistance Loses strength when wet. Heat-sensitive	Usually requires gentle washing in warm water. Some acetates need dry-cleaning. Handle gently when wet; do not wring or twist Use fabric softener to reduce static electricity. Use steam iron or low temperature.
Acrylic, Modacrylic *Common Uses* Sweaters Dresses Suits Pile fabrics Blankets	Often resembles wool (soft, bulky, fluffy). Good wrinkle resistance and crease recovery. Heat sensitive (modacrylics can be damaged by heat) May "pill" when abraded.	Washes easily – machine wash (warm water); tumble dry. Use low heat for modacrylics. Bleachable with chlorine bleach, but test colors for bleach-fastness. Use fabric softener to reduce static electricity. Use steam iron or warm (not hot) iron.
Glass *Common Uses:* Draperies Bedspreads	Poor abrasion resistance (except for Fiberglas Beta) Excellent wrinkle resistance Dyes may be removed by abrasion. Some may be damaged by dry-cleaning solvent. Weather- and sun-resistant Does not abosrb moisture.	Do not dry clean; hand wash only. (Fiberglas Beta is machine-washable with gentle conditions.) Handle gently to prevent abrasion of fibers. Do not rub or twist. White fabrics may be bleached with chlorine bleach. Drip dry; *do not iron*

Chart 2b(1)

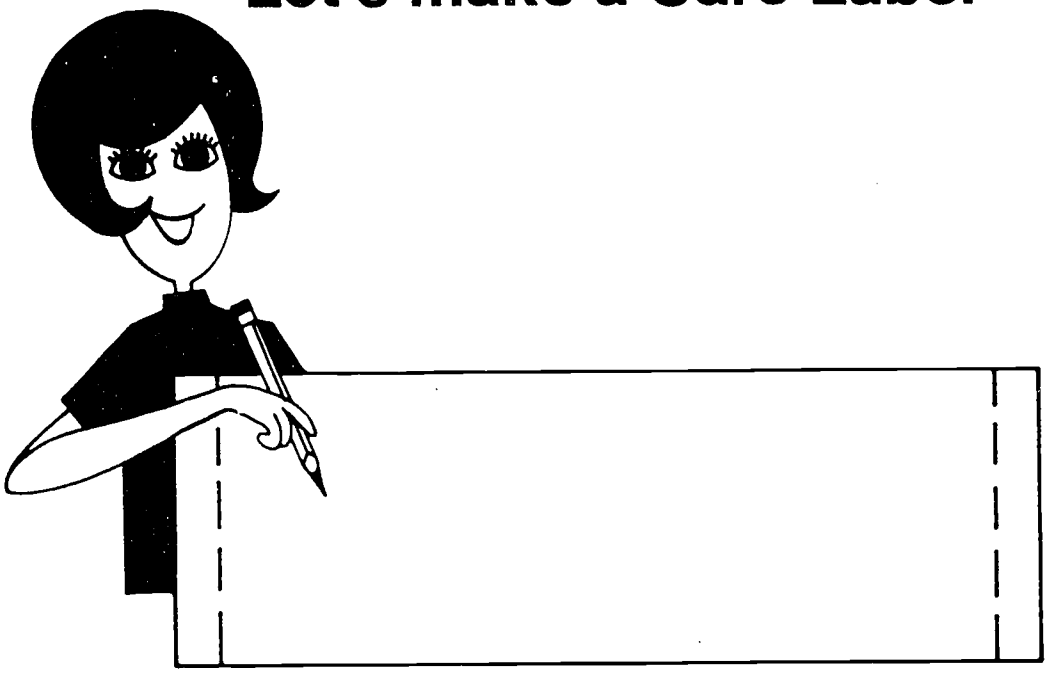
MAJOR SYNTHETIC FIBERS (2)

FIBER	*Outstanding Characteristics*	*Laundry Care*
Nylon *Common Uses:* Sweaters Slacks Dresses Hosiery Lingerie Jackets	Strongest man-made fiber Excellent abrasion resistance Does not shrink or stretch. Tends to pick up dye readily from colored items in the wash water. Not very absorbent	Washes easily – machine wash; tumble dry. Use hot water if heavily soiled and white or colorfast; otherwise use warm water. Whites should be laundered only with other whites. Bleachable with chlorine bleach, but test colors for bleach-fastness. Rinse in cold water. Use fabric softener to reduce static electricity. Use warm, not hot, iron or steam iron.
Polyester *Common Uses* Knitted suits, dresses sportswear Blouses Often combined with other fibers for durable-press apparel, tablecloths, sheets, curtains, etc. Fiberfill	Very wrinkle resistant Won't shrink or stretch if properly heat-set. May "pill" when abraded. Has an affinity for oily soils.	Polyester knits should be washed inside out to prevent snagging. Pretreat any greasy stains before washing: rub in undiluted liquid detergent. Wash same as nylon. If oily stains remain, apply dry-cleaning solvent (except on Kodel, which is softened by solvent) as directed on container; then rub in undiluted liquid detergent; wash. Use steam iron or warm temperature setting.
Rayon *Common Uses:* Usually blended with other fibers Dresses Blouses Drapery and Upholstery fabrics	Absorbent Inexpensive Tends to lose strength when wet. Adaptable to durable-press blends.	Machine or hand wash (warm water). Some rayons may require dry-cleaning to maintain shape and body. Gentle agitation should be used if laundered in a washer. Bleachable with chlorine bleach, but test colors for bleach-fastness.
Spandex *Common Uses:* Often blended with nylon for Foundation garments Swimwear Ski pants Support hose	High degree of stretch and recovery Lightweight Tends to yellow with time.	Machine washable; line dry or tumble until almost dry (use low drying temperature) Follow instructions on hang-tag; some types may be bleached with chlorine bleach, others should not.

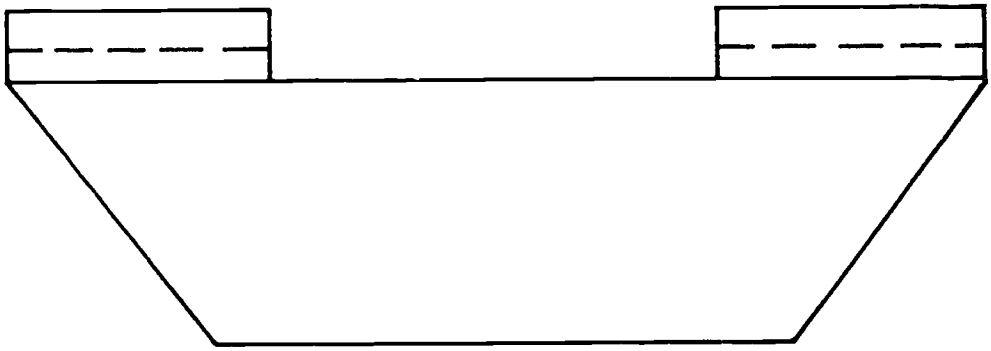
Chart 2b (2)

What to Look For When Selecting Washable Clothing

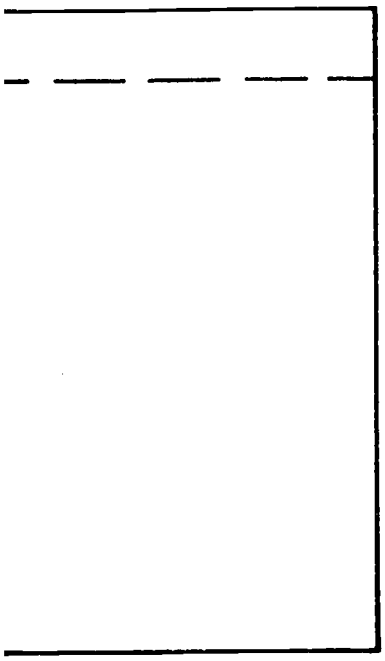
Let's make a Care Label



RECTANGULAR LABEL



MITRED LABEL



LOOP LABEL

(BROKEN LINES - - - - INDICATE STITCHING)

8 Basic Steps to Good Laundering

1

2

3

4

5

6

7

8

LAUNDRY PROBLEMS AND THEIR CAUSES

PROBLEM	POSSIBLE CAUSES
Shrinkage of wool sweater	Too much washing action.
White shirt turned pink.	Clothes were not carefully sorted. (Red fabric was washed with a white load).
Blouse turned dingy gray or yellowish.	Not enough detergent used. Water not hot enough.
Soil lines not removed on shirt collar and cuffs.	Soil lines should have been pre-treated before washing. Not enough detergent used

	WHEN LABEL READS:	IT MEANS:
MACHINE WASHABLE	Machine wash	Wash, bleach, dry, and press by any customary method, including commercial laundering and dry-cleaning.
	Home launder only	Same as above, but do not use commercial laundering.
	chlorine bleach	Do not use chlorine bleach. Oxygen bleaches may be used.
	No bleach	Do not use any type of bleach.
	Cold wash Cold rinse	Use cold water from tap or cold washing machine setting.
	Warm wash Warm rinse	Use warm water on warm washing machine setting.
	Hot wash	Use hot water or hot washing machine setting.
	No spin	Remove wash load before final spin cycle of machine.
	Delicate cycle Gentle cycle	Use appropriate machine setting; otherwise wash by hand.
	Durable press cycle Permanent press cycle	Use appropriate machine setting; otherwise use warm wash, cold rinse, and short spin cycle.
	Wash separately	Wash alone or with like colors.

	WHEN LABEL READS:	IT MEANS:
NON-MACHINE WASHING	Hand wash	Launder only by hand in lukewarm (hand-comfortable) water. May be bleached. May be dry-cleaned.
	Hand wash only	Same as above, but do not dry-clean.
	Hand wash separately	Hand wash alone or with like colors.
	No bleach	Do not use bleach.
	Damp wipe	Clean surface with damp cloth or sponge.
HOME DRYING	Tumble dry	Dry in tumble dryer at specified setting – high, medium, low, or no heat.
	Tumble dry Remove promptly	Same as above, but in absence of cool-down cycle remove at once when tumbling stops.
	Drip dry	Hang wet and allow to dry with hand shaping only.
	Line dry	Hang damp and allow to dry.
	No wring No twist	Hang dry, drip dry, or dry flat only. Handle to prevent wrinkles and distortion of fabric.
	Dry flat	Lay garment on flat surface.
	Block to dry	Maintain original size and shape while drying.
IRONING OR PRESSING	Cool iron	Set iron at lowest setting.
	Warm iron	Set iron at medium setting.
	Hot iron	Set iron at hot setting.
	Do not iron	Do not iron or press with heat.
	Steam iron	Iron or press with steam.
	Iron damp	Dampen garment before ironing.
MISCELLANEOUS	Dry-clean only	Garment should be dry-cleaned only, including self-service dry-cleaning.
	Professionally dry-clean only	Do not use self-service dry-cleaning.
	No dry-clean	Use recommended care instructions. No dry-cleaning materials to be used.

3.1. DEMONSTRATION: To show effect of excessive agitation, either by machine or by hand, on woolen fabric.

SUPPLIES

Automatic Washer
1/3 yard untreated woolen fabric, 48 to 54 inches wide.
Ruler (preferably a 3-sided one which has a tenth of an inch scale for easy calculation). Borrow from the Mathematics or Mechanical Drawing department if necessary.
Scissors
Laundry marking pen or needle and thread
All purpose detergent
Measuring cup
Tablespoon
6 to 8 bath towels (to use as a filler load)
Dishpan

TIME REQUIRED:

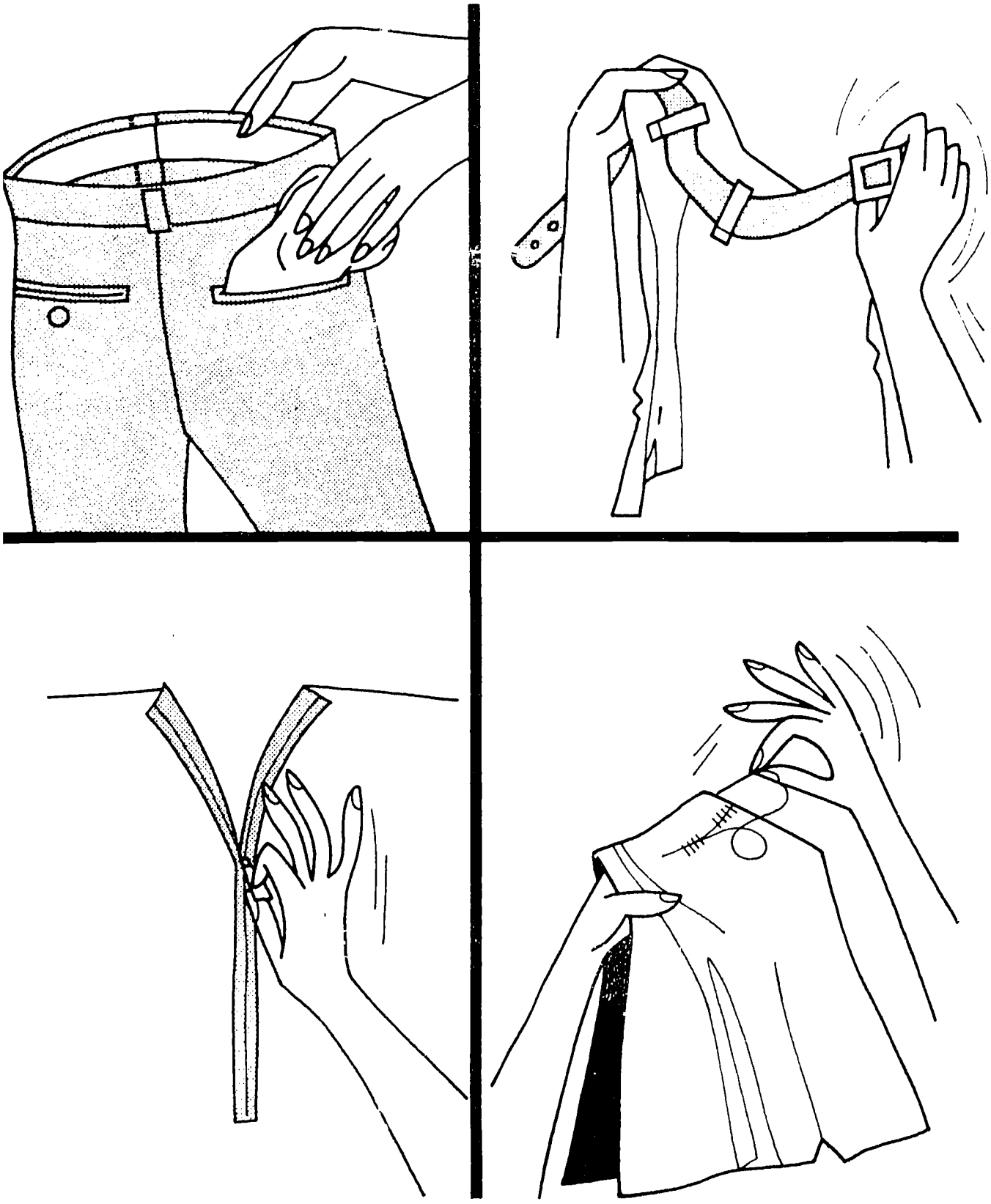
If all parts of experiment are done, this may require parts of 2 or 3 class sessions. The point can be made with just parts "a" and "b" *only* or "c" and "d" *only*

INSTRUCTIONS:

1. Cut the woolen fabric into 4 equal pieces.
2. In the center of each piece, rule off an accurate 10-inch square with the marking pen. Or mark with a heavy pencil and sew carefully around the square with thread, using a basting stitch. Number the swatches from 1 to 4. (To save time this could be done ahead of class time, but explain to class what has been done or show how it was done.)
3. Washing methods:
   a. Test swatch #1
      (1) Pour the recommended amount of detergent into an automatic washer.
      (2) Let machine fill with warm water.
      (3) Add test swatch #1 and filler load of towels.
      (4) Start the washer and allow 10 minutes wash time with regular-speed agitation. Let machine proceed through the cycle, but time the number of minutes of agitation in the rinse. The total amount of agitation is significant, because any agitation, regardless of whether it occurs in the wash or rinse, contributes to shrinkage. Spin periods do not affect shrinkage.
      (5) Remove test swatch from the washer and line-dry.
   b. Test swatch #2.
      (1) Follow first 3 steps used for test swatch #1. Preferably use same automatic washer.
      (2) Start automatic washer and allow just 1 minute of agitation. (Use slow agitation if this selection is available.) Advance control dial to the wash spin. Let the machine proceed through the spin and fill for the deep rinse. Allow 1 minute of rinse agitation. Advance control dial to the final spin and let the machine complete the cycle.
      (3) Remove test swatch from washer and line-dry.
   c. Test swatch #3.
      (1) Fill sink or dishpan with 1 gallon of warm water. Add 2 tablespoons of detergent and swish to dissolve.
      (2) Add test swatch #3 and rub and squeeze vigorously for 5 minutes (let students alternate if they get tired).
      (3) Fill sink with fresh water and rinse rigorously for 2 minutes.
      (4) Repeat step 3.
      (5) Roll swatch in terry towel to absorb moisture, and line-dry.
   d. Test swatch #4.
      (1) Follow procedures for swatch #3, but allow only 1 minute of gentle squeezing in the wash and in both rinses.
   e. After all swatches are dry, lay them out smoothly on a table and compare their appearance and feel. Then using the 1/10" scale rule, take 3 random measurements in both directions on the 10 inch squares. (Each mark on the scale = 1% shrinkage). Average the 3 readings to determine the amount of shrinkage. Up to 3% shrinkage would be acceptable for a woolen garment. More than this would represent a change of one size, 5% shrinkage would be acceptable for a blanket.

NOTE: Water temperature exerts only a secondary effect on shrinkage of woolens. ***Agitation*** is the primary factor. However, if agitation is excessive, more shrinkage may be produced in hot than in warm water.

Preparing Laundry

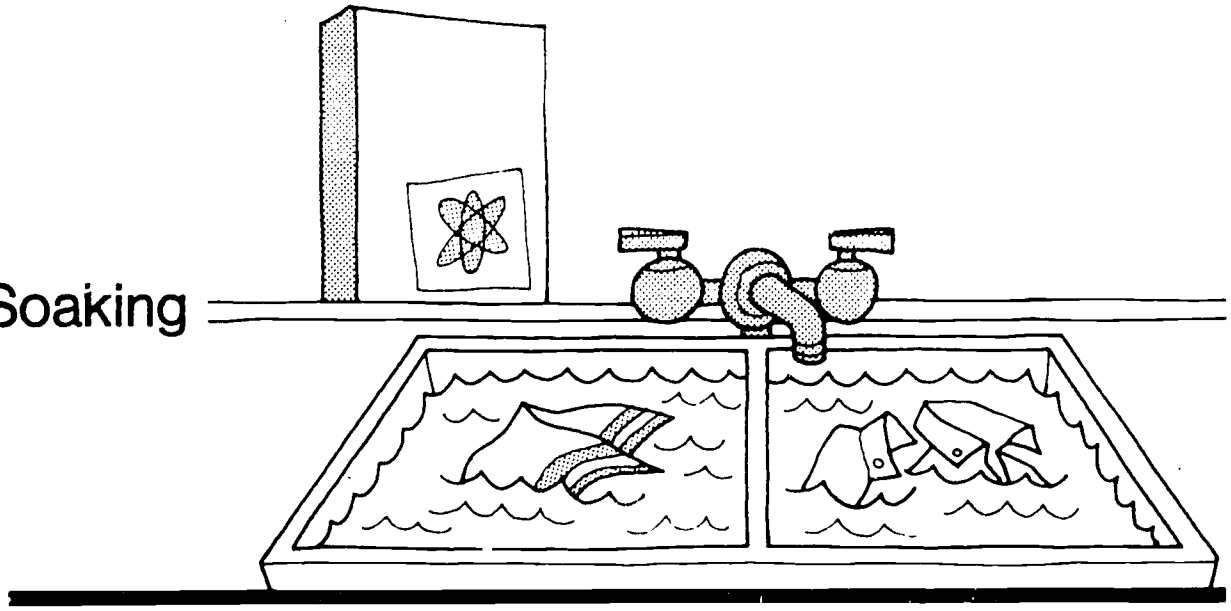


AV–4a

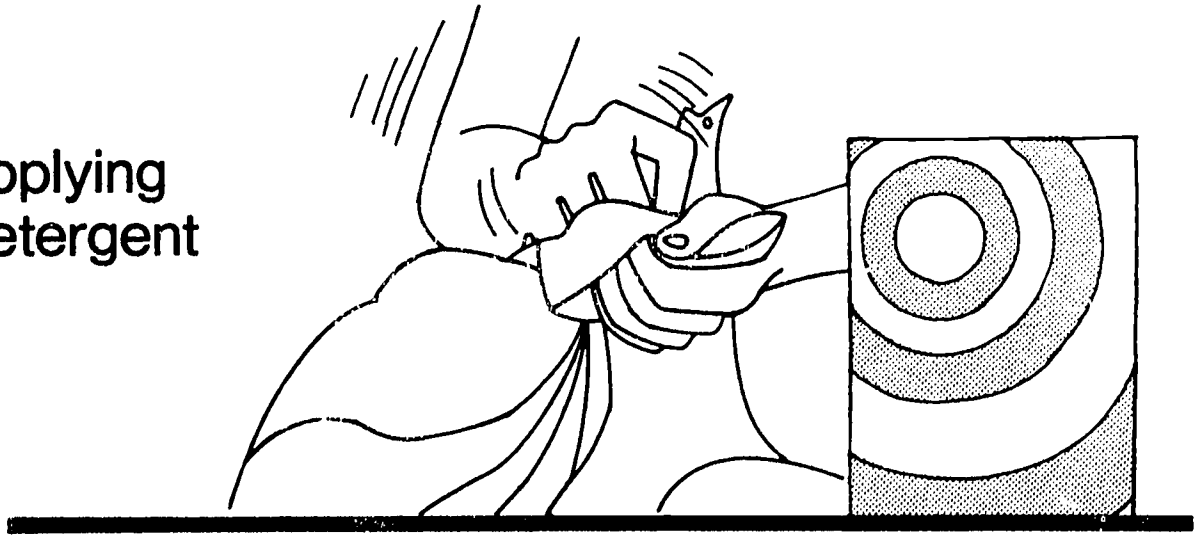
Which Item Doesn't Belong In This Load?

Ways of Pretreating

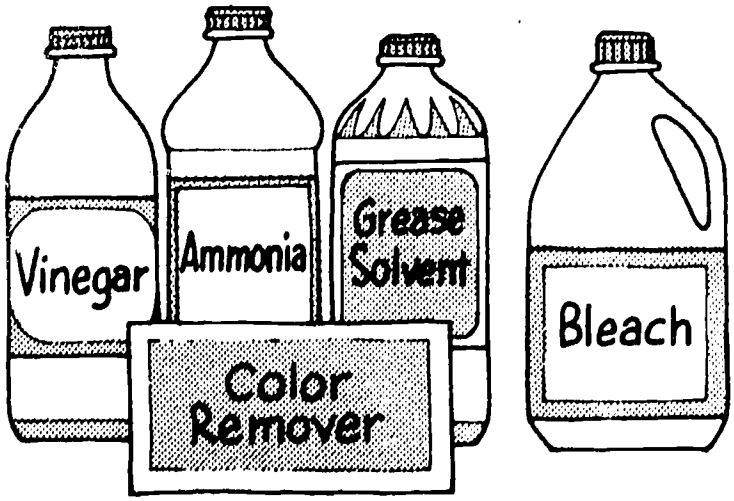
Soaking



Applying Detergent



Special Treatments



AV–4c

STAIN REMOVAL CHART

STAIN	TREATMENT
CANDLE WAX	Remove surface wax with a dull knife. Place stain between paper towels and press with a warm iron. Then place stain face down on paper towels and sponge back of any remaining stain with dry-cleaning solvent. Let dry, then launder. If traces of color remain, soak in Biz or an oxygen bleach, then launder. If color is still present, wash again using chlorine bleach, if safe for fabric.
CHEWING GUM ADHESIVE TAPE RUBBER CEMENT	Apply ice to stain to harden it. Remove excess stain material carefully with dull knife. Place face down on paper towels and sponge with a dry-cleaning solvent. Launder.
COFFEE OR TEA	Soak in Biz or an oxygen bleach, using hottest water safe for fabric, then launder. If stain remains, launder again using chlorine bleach, if safe for fabric.
COSMETICS	Dampen stain and rub with bar soap. Rinse and launder.
CRAYON	
Few spots	Treat same as candle wax (above).
Whole load of clothes	First wash with hot water, using a laundry soap (e.g., Ivory Snow) and 1 cup baking soda. If spots remain, have clothes dry-cleaned.
DEODORANTS AND ANTI-PERSPIRANTS	For light stains, rub in an undiluted light-duty liquid detergent. Launder, using hottest water safe for fabric. For heavy stains, place face down on paper towel and sponge back of stain with dry-cleaning solvent; rinse. Then rub in undiluted light-duty liquid. Rinse and launder, using hottest water safe for fabric.
DYE TRANSFER	White fabrics that have picked up dye from a colored fabric that "bled" may be restored by using a fabric color remover. Launder. If dye remains launder again, using chlorine bleach, if safe for fabric. For colored fabrics or non-bleachable whites, soak in Biz or an oxygen bleach, then launder.
FABRIC SOFTENERS	For stains which result from accidental spills, dampen stain and rub with bar soap. Rinse. Repeat if necessary. Launder.
GREASY STAINS (car grease or oil, butter, margarine, lard, salad dressings, cooking oils)	Place stain face down on paper towels. Apply dry cleaning solvent to back side of stain and flush from center of stain to outer edges with a clean white cloth. Dampen with water and rub with bar soap or a light-duty liquid detergent. Launder.

STAIN	TREATMENT
INKS	
Ballpoint	Place stain face down on paper towels. Sponge back of stain with dry-cleaning solvent. If some ink still remains, rub with bar soap. Rinse and launder.
Regular	Dampen stain with water and rub with bar soap. Rinse. Soak in Biz or an oxygen bleach, using hottest water safe for fabric; then launder. If stain remains, launder again, using chlorine bleach if safe for fabric. Some types of ink may require a color remover. Some permanent inks cannot be removed.
IODINE	Rinse from underside of stain with cool water. Soak in solution of color remover. Rinse and launder.
LIPSTICK	Place stain face down on paper towels. Sponge back of stain with dry-cleaning solvent, replacing the paper towel underneath frequently so that more of the color will be removed. Dampen stain with water and rub with bar soap. Rinse and launder.
MILDEW	Launder using chlorine bleach, if safe for fabric. If not, soak in an oxygen bleach, then launder.
MUSTARD	Dampen stain with water and rub with bar soap. Rinse and launder using chlorine bleach, if safe for fabric. If not, soak in Biz or an oxygen bleach, using hottest water safe for fabric, then launder. Several treatments may be needed to remove the stain.
NAIL POLISH	Place stain face down on paper towels. Sponge back of stain with nail-polish remover, replacing the paper towel under the stain frequently. Repeat the sponging until stain disappears. Launder. (Do not use nail-polish remover on acetate or Arnel fabrics. Send them to a dry cleaner.)
PAINT	
Latex, acrylic, water-base paints	TREAT STAINS WHILE STILL WET. THESE PAINTS CANNOT BE REMOVED AFTER THEY HAVE DRIED. Rinse in warm water to flush out paint, then launder.
Oil-base paint, varnish	Apply the solvent recommended on the paint container. If container is not available, apply turpentine. Rinse. Rub with bar soap. Rinse and launder.
PERSPIRATION	Dampen stain and rub with bar soap. (Treat carefully, as perspiration weakens some fibers, such as silk.) Presoak with Biz or an enzyme detergent. Launder in hot water with chlorine bleach, if safe for fabric. Note: if perspiration has changed the color of a fabric, apply ammonia to fresh stains, vinegar to old stains, and rinse. Launder in hottest water safe for color. (Also see DEODORANTS AND ANTI-PERSPIRANTS.)
RUST	
Few spots	DO NOT USE CHLORINE BLEACH ON RUST. Apply a rust stain remover. Rinse and launder.
Rusty discoloration on load of white items	Use a fabric color remover. Launder. If stains remain, dissolve 1 ounce oxalic acid crystals per gallon of water in a plastic container. Soak clothes for 10-15 minutes. Rinse and launder.

STAINS	TREATMENT
SCORCH	Soak in strong solution of Biz or an oxygen bleach, using hottest water safe for fabric, then launder. If scorch remains, launder again using chlorine bleach, if safe for fabric. (Severe scorch cannot be removed.)
TOBACCO	Dampen stain and rub with bar soap. Rinse. Soak in Biz or an oxygen bleach, then launder. If stain remains, launder again, using chlorine bleach if safe for fabric.
URINE, VOMIT, MUCUS	Soak with Biz or an enzyme detergent. Launder, using chlorine bleach, if safe for fabric. If not, use an oxygen bleach with the detergent.
WINE, SOFT DRINKS	Soak with Biz or an oxygen bleach, using hottest water safe for fabric, then launder. If stain remains launder, using chlorine bleach if safe for fabric.
YELLOWING OF WHITE NYLON, DURABLE PRESS, ETC.	Soak overnight with Biz or an enzyme detergent. Launder in hot water, using a generous amount of detergent and chlorine bleach, if safe for fabric. If not, use an oxygen bleach with the detergent.

Treatments for Special Stains

Stain	Treatment
Gum	Apply ice, scrape off. Put face down on paper towel and use cleaning fluid.
Coffee, Tea, Soda, Wine	Presoak in hottest water that fabric will take.
Cosmetics	Wet and apply *bar* soap.
Nail polish	Place face down on paper towel and sponge with nail-polish remover. Change towel often.
Perspiration	Wet stain and apply bar soap. Presoak and then wash. If perspiration has changed the color of the fabric, then treat before laundering: Fresh stain – with ammonia Old stain – with vinegar Rinse, then launder in hottest water safe for fabric.

Chart 4b

4.1 DEMONSTRATION: To test colorfastness of colored fabrics.

SUPPLIES:

Beakers or glass measuring cups
(The number depends upon how many groups of students there are.)
Measuring spoons
All-purpose detergent
Thermometers
Warm water, hot water
Range of colored fabrics of varying intensity (2 identical swatches of each fabric).
Include prints, plaid, etc.
Size need be no larger than 3" x 5".
Clear glass jars or drinking glasses

INSTRUCTIONS:

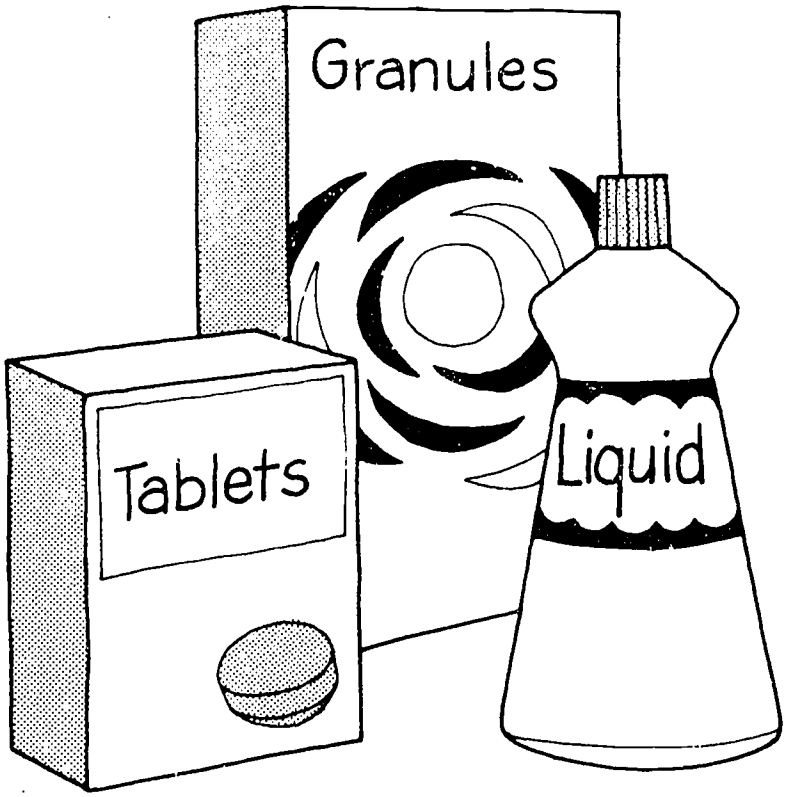
Divide class into groups of 3 and 4 and give each group several colored fabrics to test. Assign several groups to test the fabrics in warm water and several groups to test identical fabrics in hot water. Have students proceed as follows:

1. Fill beakers or glass measuring cups about two-thirds full with warm (100°F.) water or hot (140°F.) water.
2. Add ¼ teaspoon of an all-purpose detergent and mix to dissolve it.
3. Soak colored fabric.
4. Squeeze fabric gently or stir it and watch to see if water discolors.
5. Pour water into a glass container such as a jar or drinking glass and set fabric beside this container so these can be shown to the rest of the class later. Label glass container "Warm" or "Hot", depending upon the water temperature used.
6. Repeat this demonstration with other colored fabrics.

When all groups have completed their testing, have them report their results, showing both the fabric and the water in which it was tested. Compare the color of the water in the containers labeled "warm" and "hot" from a given fabric. Are some fabrics colorfast in warm water but not in hot water? Are some fabrics colorfast in both temperatures? Are some not colorfast in either temperature?

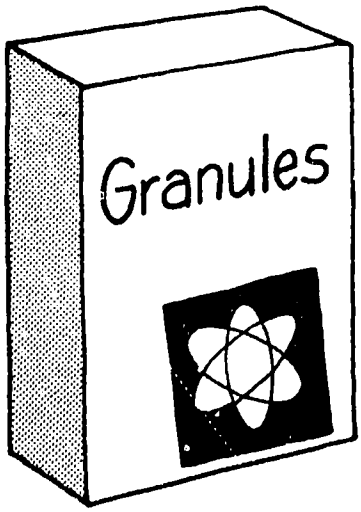
When a fabric is not colorfast, it should always be washed alone or only with other items of like color. Fabrics not colorfast in hot water should be washed in warm. Extremely sensitive colors should be washed in cold water.

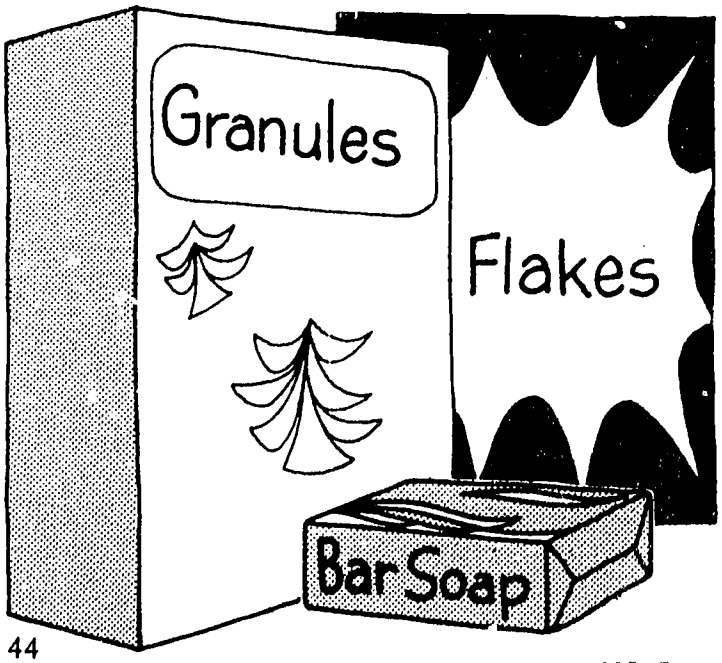
Detergents



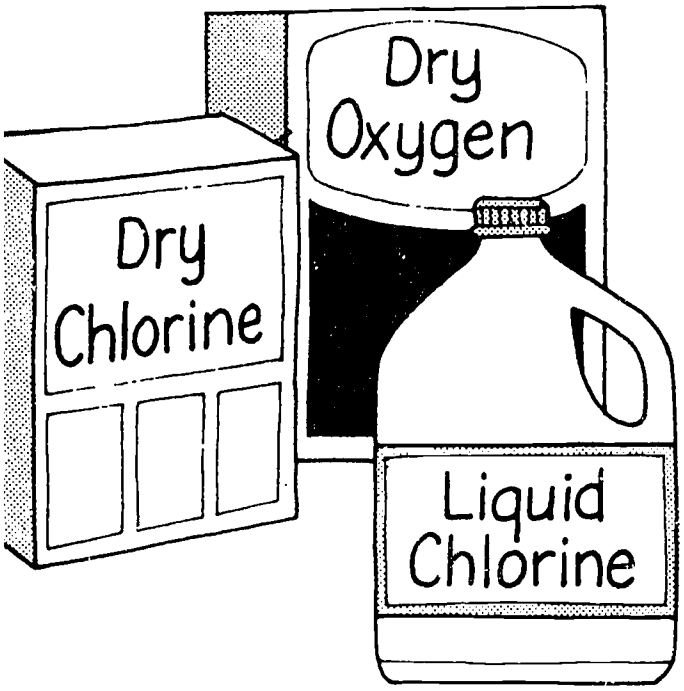
Soaps

Enzyme Pre-soak Products

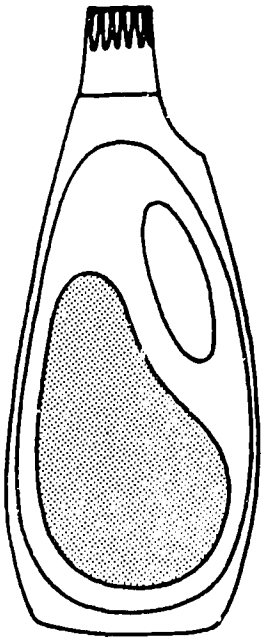




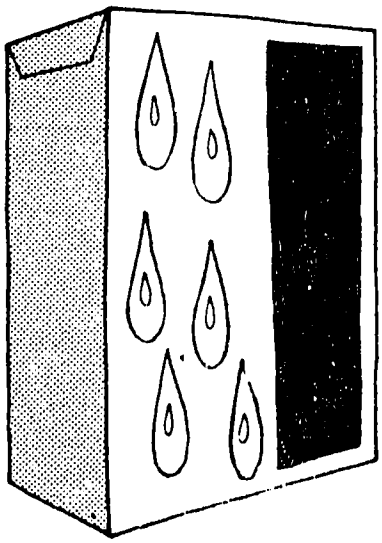
Bleaches



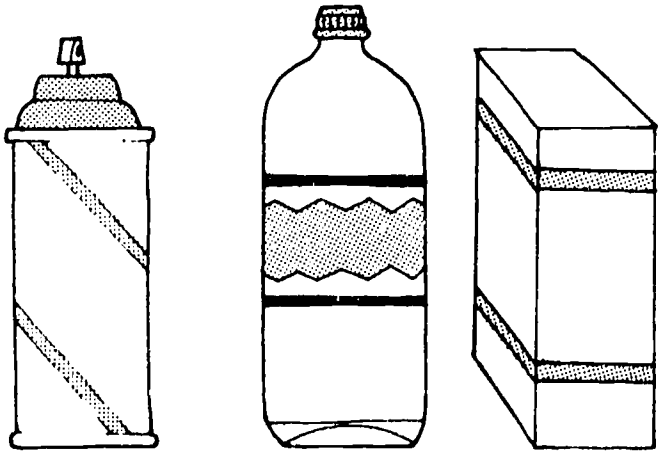
Fabric Softener



Water Softener



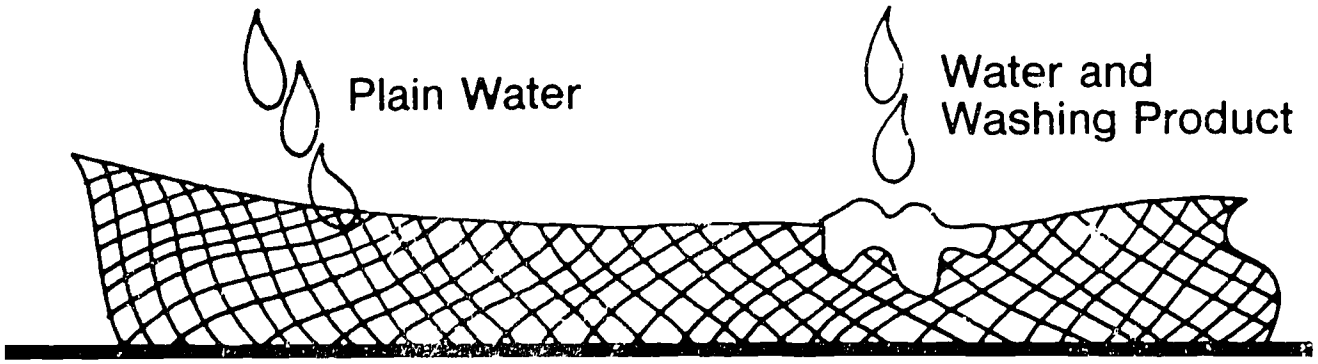
Starches



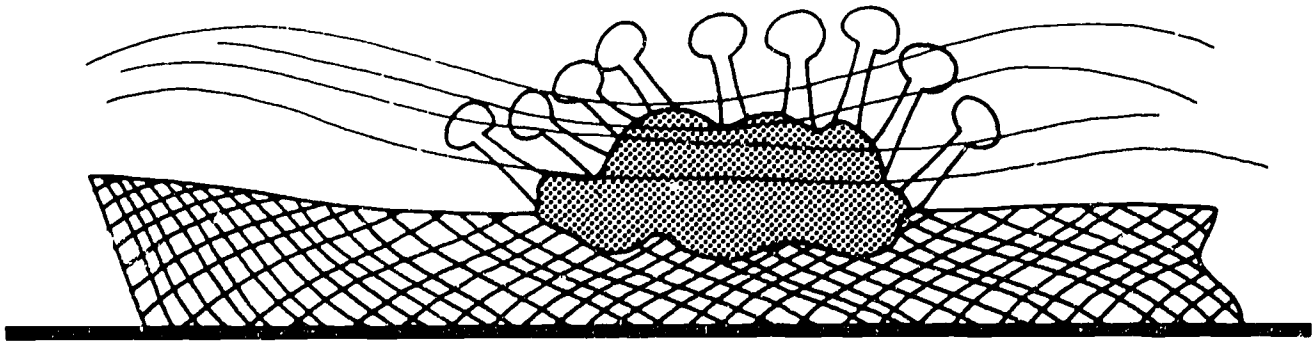
Aerosol Liquid Dry

3 Basic Functions of Detergents

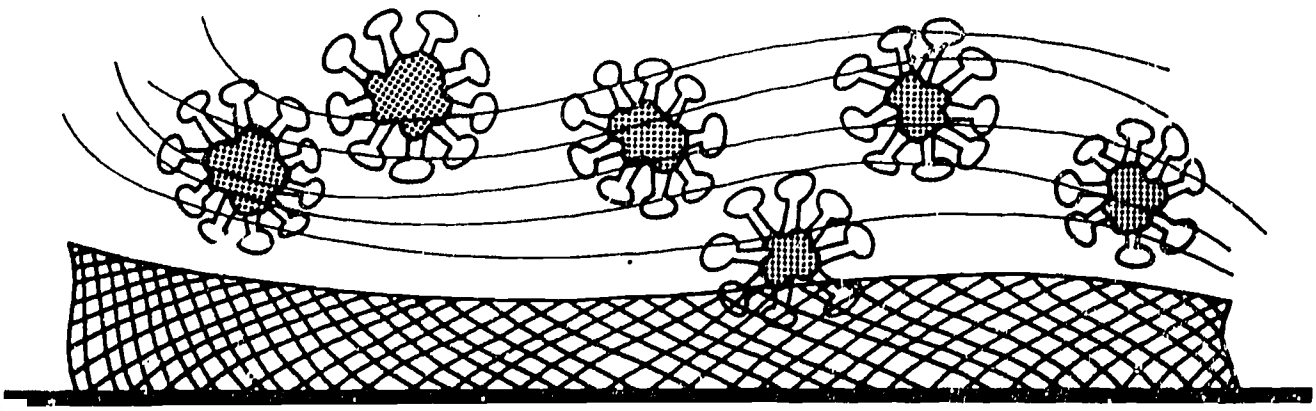
1. Make Water Wetter



2. Remove Soil from Fabrics

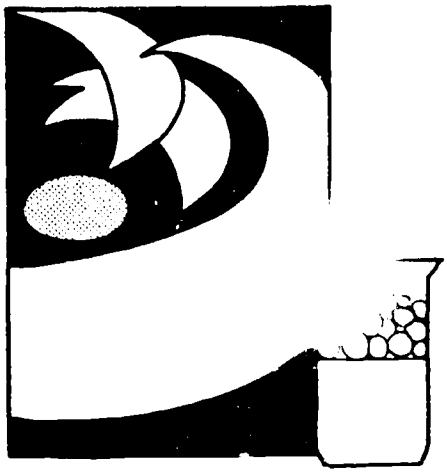


3. Keep Soil Suspended in Water

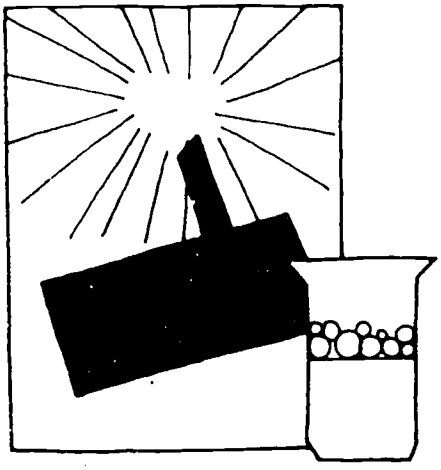


Detergents

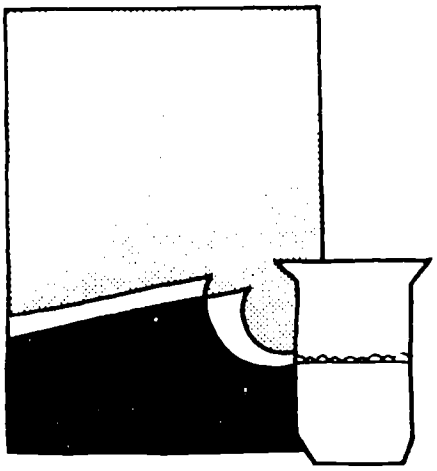
All-Purpose



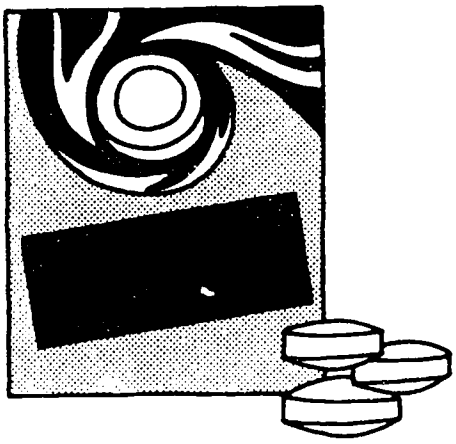
Normal Sudsing



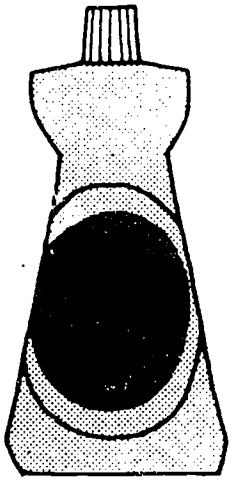
Intermediate Sudsing



Low Sudsing

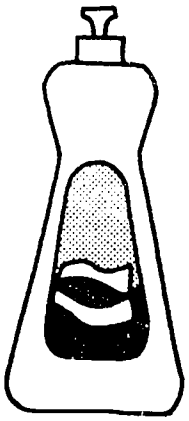


Low Sudsing Tablets



Heavy Duty Liquids

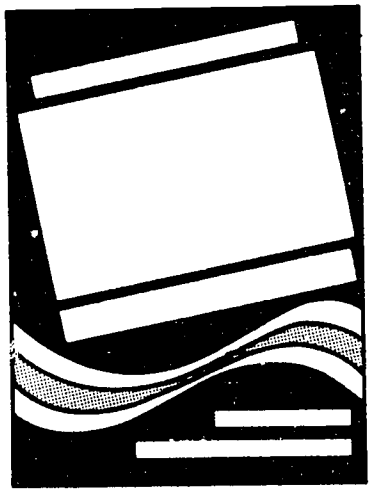
Light Duty



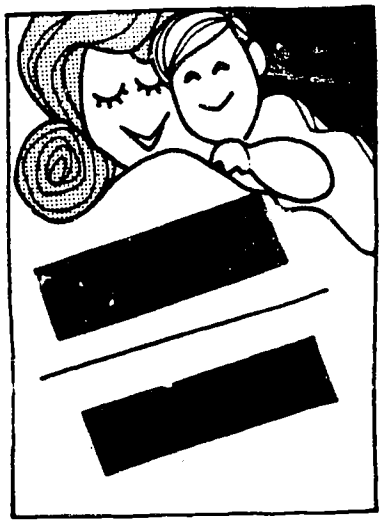
Light Duty Liquids

Soaps

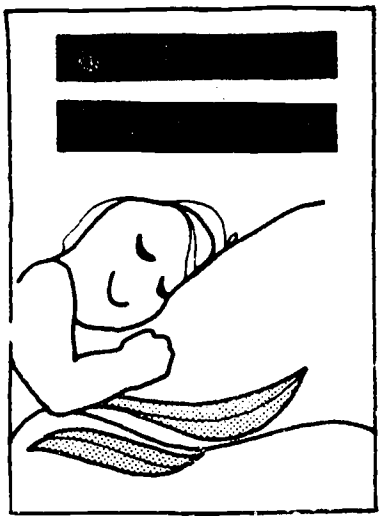
All-Purpose



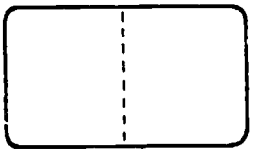
Light Duty



Granules

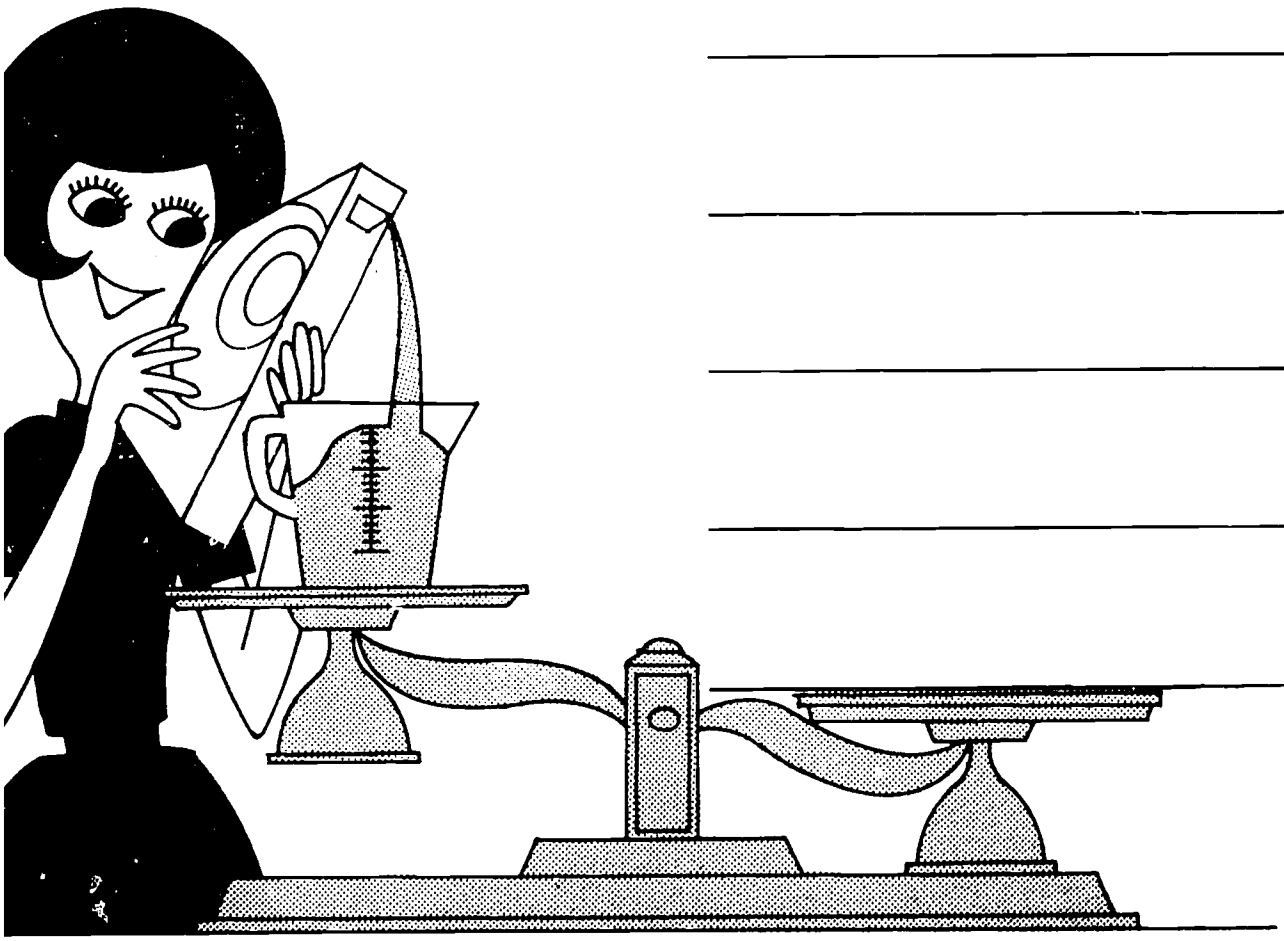


Flakes



Bars

What Things Influence How Much Soap Or Detergent To Use?



5.1 DEMONSTRATION: To show how soaps and detergents make water wetter, or reduce the surface tension of water, enabling it to penetrate fabrics faster and more thoroughly.

SUPPLIES:

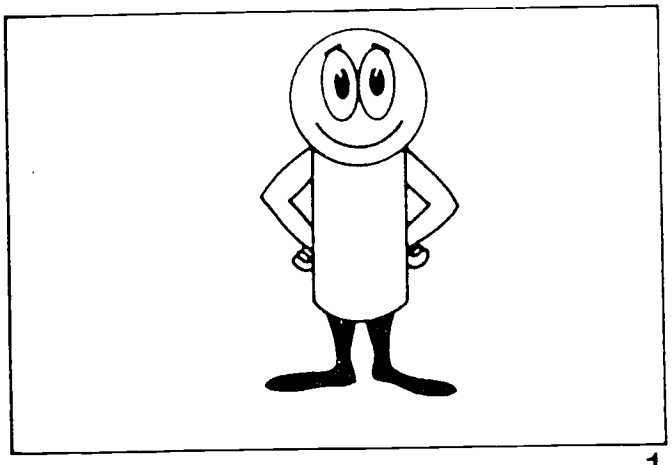
2 glass measuring cups
thermometer
all-purpose detergent
measuring spoons
2 eye droppers

1 swatch tightly woven polyester/cotton fabric. (Some fabrics such as cotton are too absorbent to show this difference in water penetration dramatically. A polyester/cotton tarpoon cloth is good for this demonstration.)

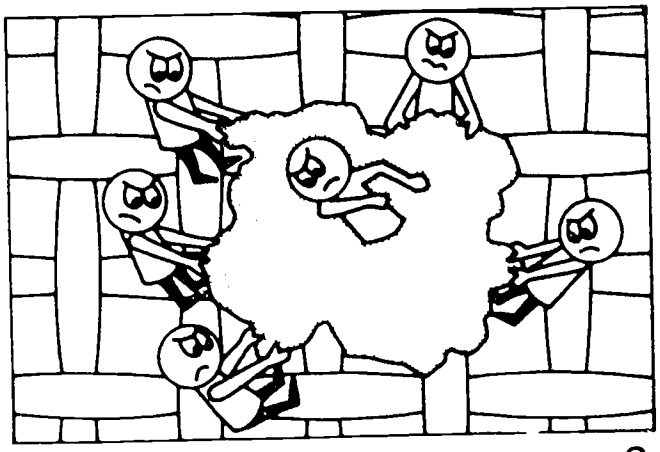
INSTRUCTIONS:

Fill 2 glass measuring cups with 100°F. water. To one cup, add ½ teaspoon of an all-purpose detergent such as Tide and mix until the detergent is dissolved. Place an eye dropper in each cup. Put 1 drop of the plain water and 1 drop of the detergent solution 1-2 inches apart on the polyester/cotton swatch. Watch how the droplet of plain water remains in a bead on the surface of the fabric, while the droplet solution spreads out and penetrates into the fabric. This penetration of water into the fiber or yarns and spaces between them is necessary for removal of water-soluble soils.

HOW ENZYMES WORK



1.



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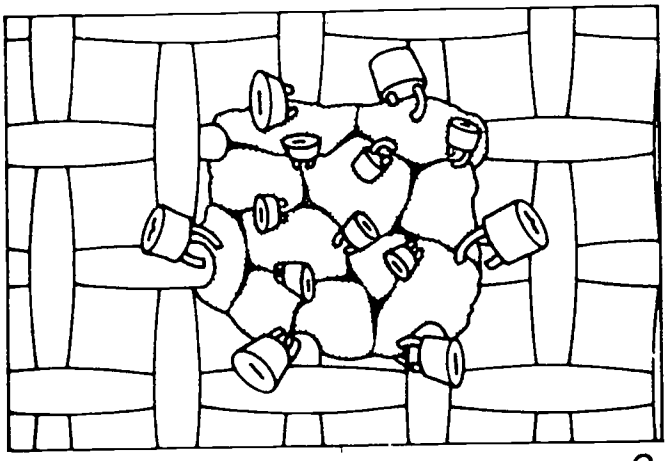

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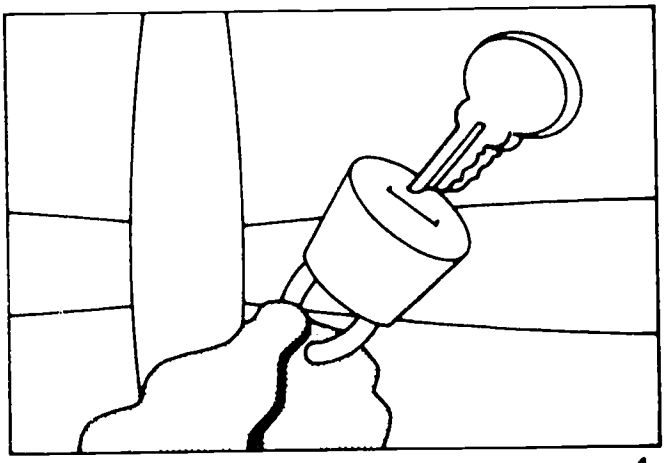

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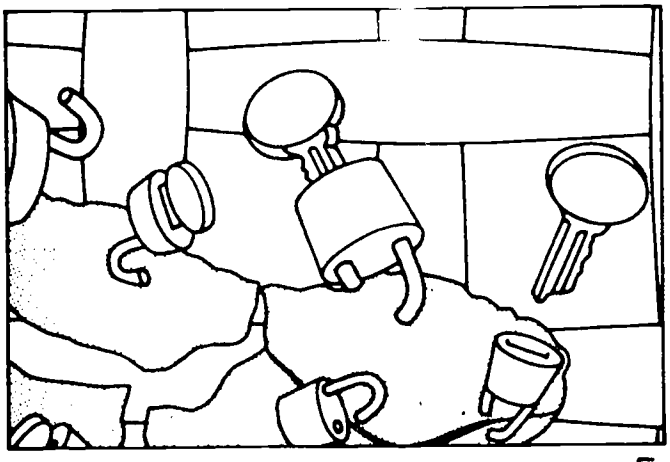
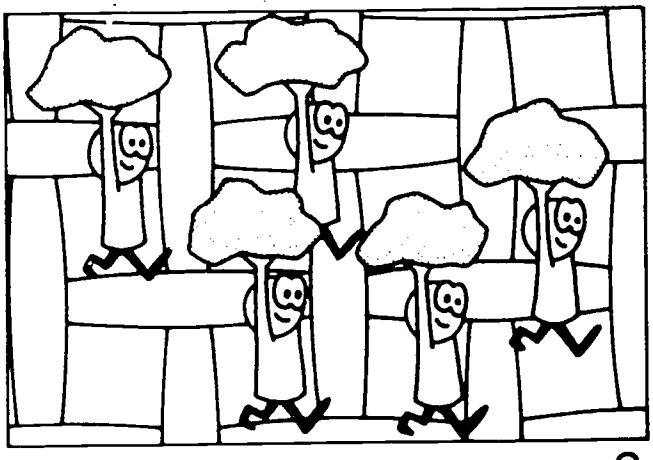
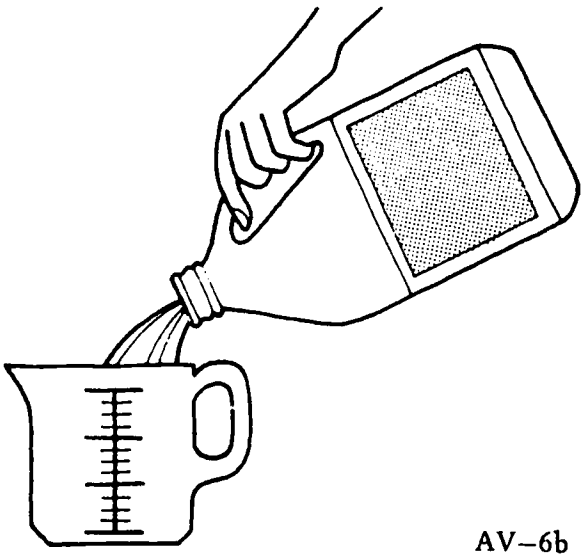


5.

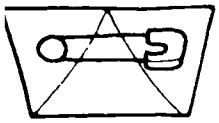


6.

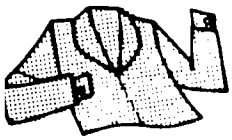
Can I Use Chlorine Bleach On These Fabrics?

NO	YES
	

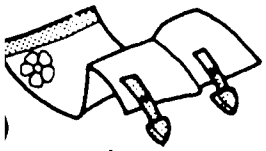
Which Bleach Should You Use: Oxygen or Chlorine?



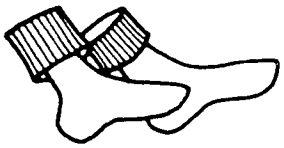
Diapers



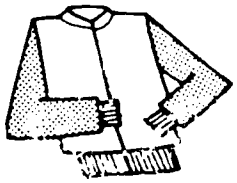
Silk Blouse



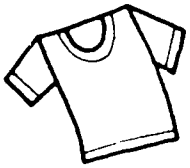
ylon/Spandex Girdle



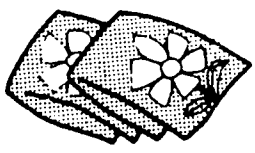
hite Cotton Socks



nk Wool Sweater



White T-Shirt



rinted Dish Towels

6.1 DEMONSTRATION: To illustrate which fabrics can and which cannot be bleached with a chlorine bleach.

SUPPLIES:

Liquid chlorine bleach
Glass measuring cup
Thermometer
All-purpose detergent
Hot water
Approx. 2" x 4" swatches of white silk, wool, nylon, polyester/cotton, acrylic, untreated cotton, linen (2 swatches of each fabric).

INSTRUCTIONS:

1. Adjust faucets until water temperature is 140°F. Run water into glass measuring cup to 1 cup level.
2. Add ½ tsp. chlorine bleach and ¼ tsp. all-purpose detergent. Stir. Then add 1 swatch of each type of fabric.
3. Let fabrics remain in solution for 5 minutes. Rinse, then compare the color with a wet but unbleached swatch of each fabric.

Silk, wool, mohair, and some types of spandex turn yellow and will be seriously weakened when bleached with a chlorine bleach. Other fibers should be unaffected. (Occasionally some cottons or blended fabrics will turn yellow because of a chlorine-sensitive resin finish. These finishes are quite rare, however.

6.2 DEMONSTRATION: To test the bleach-fastness of colored fabrics.

SUPPLIES:

Same as #1 except use a range of colored fabrics instead of white ones.

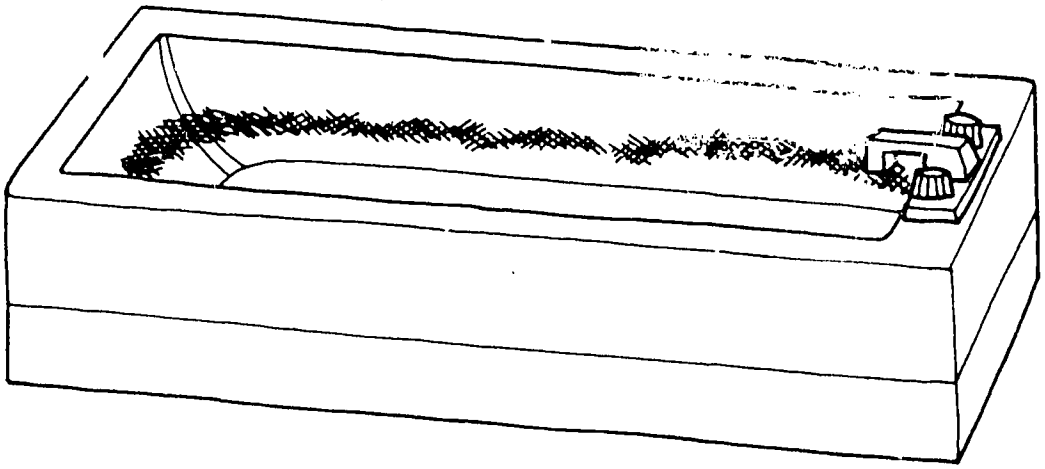
INSTRUCTIONS:

1. Divide students into groups of 3 or 4. Give each group several different colored fabrics to test.
2. Have groups follow steps 1-3 in Demonstration 6.1.

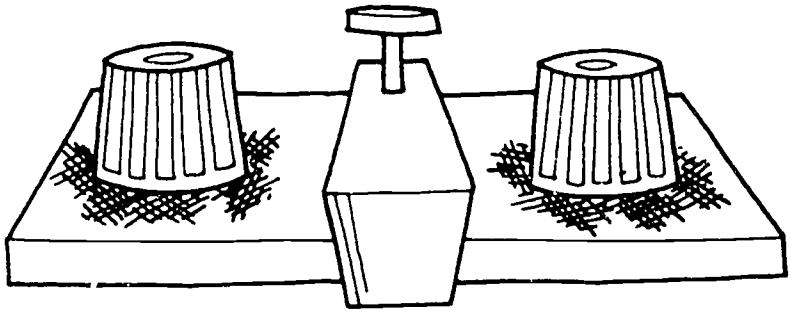
You may be surprised at the number of colored fabrics that can safely be bleached. Many brightly colored towels, sheets, blouses and other items are bleachfast. When bleachability is in question, the fabric should always be tested first using the procedure above on a small piece of the fabric clipped from a seam. In cases where there are no seams (tablecloths, sheets, towels) test a smaller, less expensive item, such as a napkin rather than a tablecloth, or a washcloth rather than a bath towel. One should never attempt to bleach a portion of a colored item. If bleaching is required, bleach the whole item, so that if color is affected, the color loss will be uniform and not spotty.

How To Recognize Hard Water

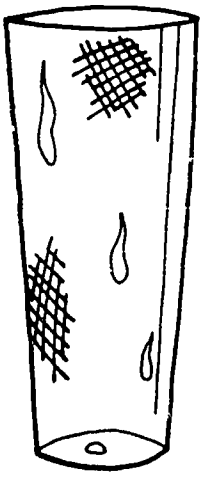
(bathtub ring)



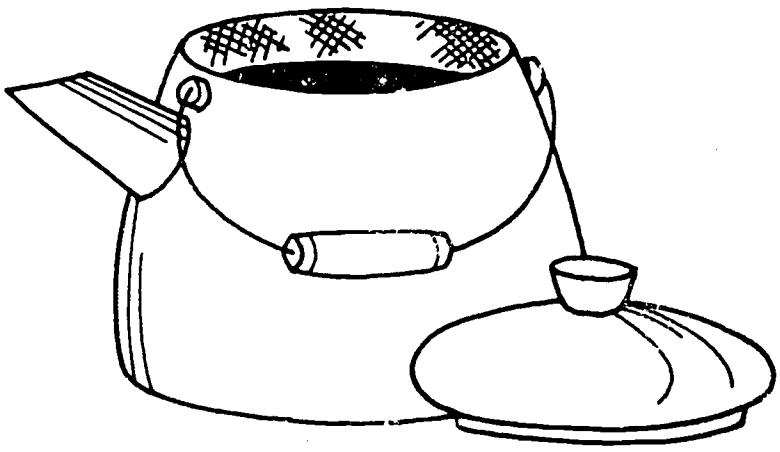
(crusty appearance on faucet)



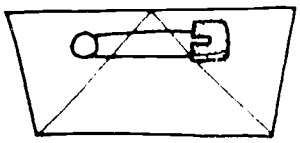
(film on glassware)



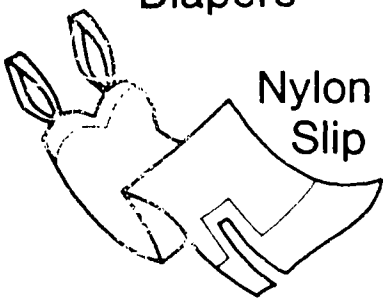
(deposit inside teakettle)



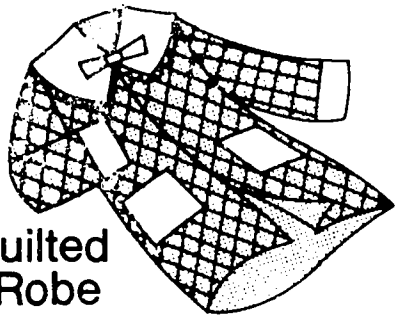
What Does Fabric Softener Do For These Items?



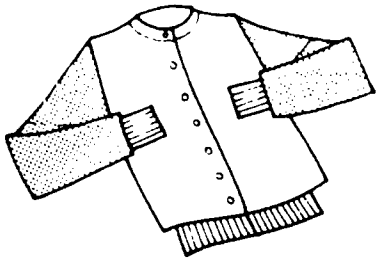
Diapers



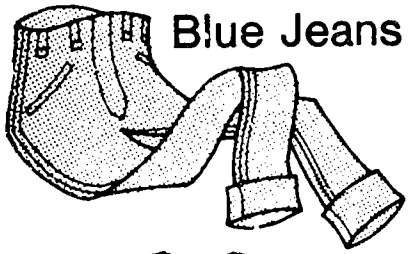
Nylon Slip



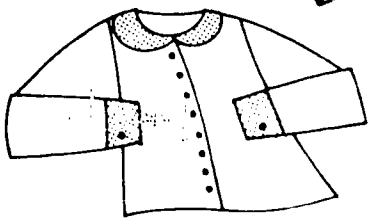
Quilted Robe



Orlon Sweater



Blue Jeans



Permanent Press Blouse

7.1 DEMONSTRATION: (A) To illustrate what is meant by static electricity in clothing and to show that fabric softener will prevent this problem.

SUPPLIES:

Washer and dryer (if 2 of each are available, this will speed up the demonstration. They do not need to be of the same make.)

All-purpose detergent

Liquid fabric softener

Two identical wash loads of items such as: nylon slips polyester/cotton shirts or blouses, acrylic or nylon sweaters, acrylic or nylon socks, polyester knits, terry woven cloths.

INSTRUCTIONS:

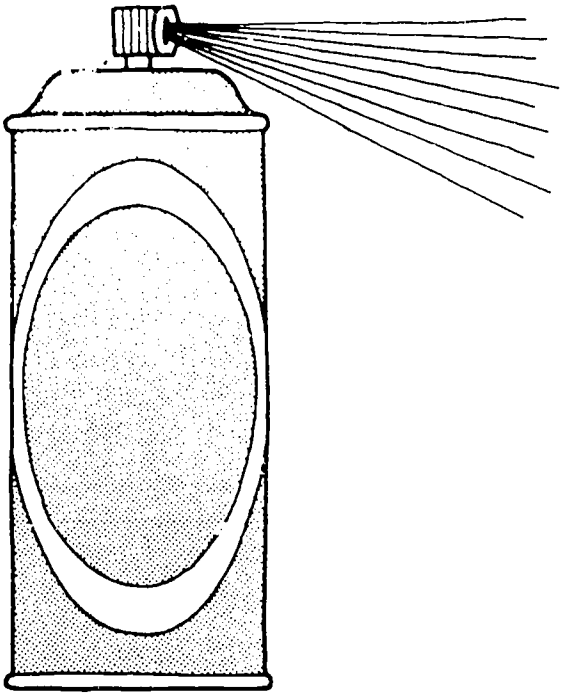
With 2 washers and dryers, this demonstration will take approximately 40 minutes. Washing the loads before the class period will save 8-10 minutes. The class demonstration could start then with Step #3.)

1. Wash both loads separately, using warm water and an all-purpose detergent. (Use the amount recommended on the package for your type of washer.) To save time, wash clothes for 5 minutes with the normal cycle on washer. (Permanent press or wash and wear cycle would ordinarily be recommended for this type of load, but in some machines the cycle is longer due to the cool-down.)
2. After 5 minutes, advance dial on washer to the end of the wash period. Washer will drain water and spin.
3. As washer fills for the rinse, add 2 caps of fabric softener to one of the washers. Do not add any to the other load. Let washers complete the cycle.
4. Dry the 2 loads separately in automatic dryers. When the loads are dry (approximately 20-25 minutes), remove the loads from the dryers and note how the unsoftened fabrics will cling together and crackle with static electricity. Some sparks may even be seen. The load softened with the fabric softener will be free of static electricity.

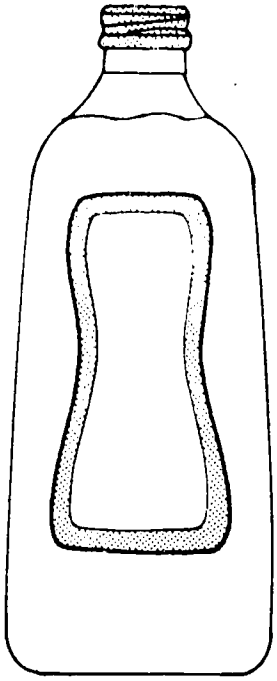
NOTE: If only one washer and dryer is available, this experiment can be done on separate days. If the unsoftened load is done first, the fabrics taken from the dryer can be put immediately into a large plastic bag (like a blanket storage bag) and closed tightly. The static charge will hold for several days so that a comparison can be made at a later time.

DEMONSTRATION: (B) To illustrate softening.
Have students feel the washcloths that were in both loads of wash in demonstration 7.1. The washcloth which was in the softened rinse will be softer and fluffier than the other one.

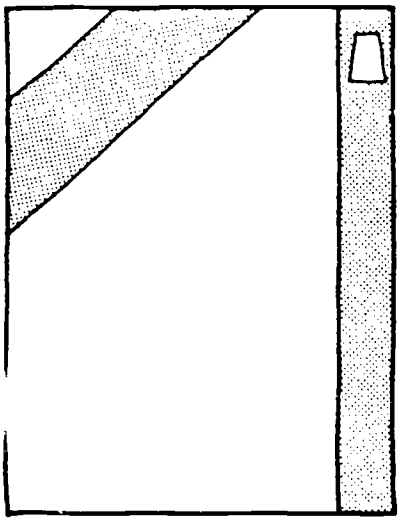
Forms of Starch



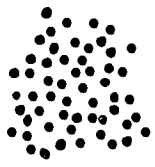
Aerosol Starch
or Fabric Finish



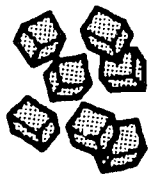
Liquid
Starch



Dry Starch



Powder



Cubes

Flakes

8.1 DEMONSTRATION: To illustrate the body and stiffness which starches give to fabrics.

SUPPLIES:

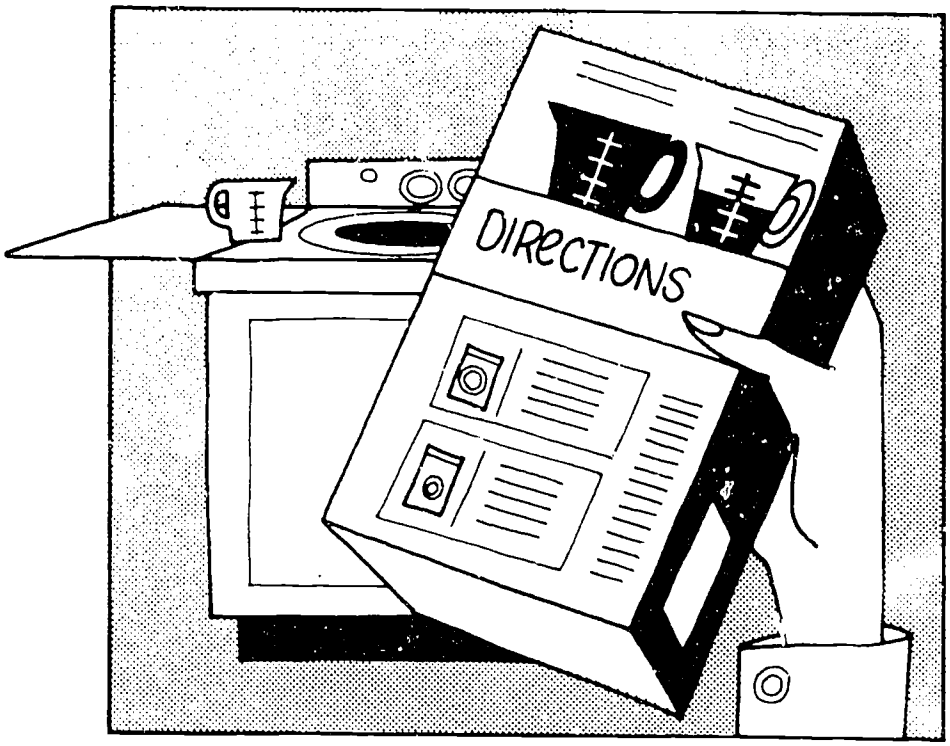
Aerosol starch
Iron
Ironing board

2 identical 12" x 12" swatches of fabrics which have been washed several times to remove sizing,
- polyester/cotton
- 100% cotton
- linen
- rayon

INSTRUCTIONS:

Using aerosol starch as directed, spray and iron 1 swatch of each of the fabric types. Let students feel the starched fabrics and compare them with the identical fabrics which have not been starched. Have students discuss which clothing and household items would particularly benefit from starch and which should not be starched.

Read Directions Carefully



What information is on a package?

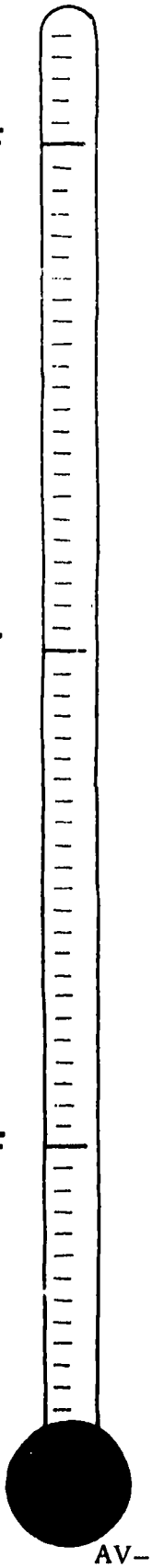
AV–9a

Water Temperatures

1. Why use HOT water? **140° F**

2. Why use WARM water? **100° F**

3. Why use COLD water? **80° F**

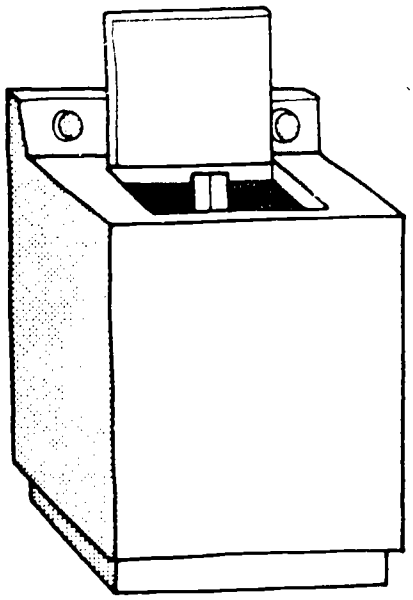


AV–9b

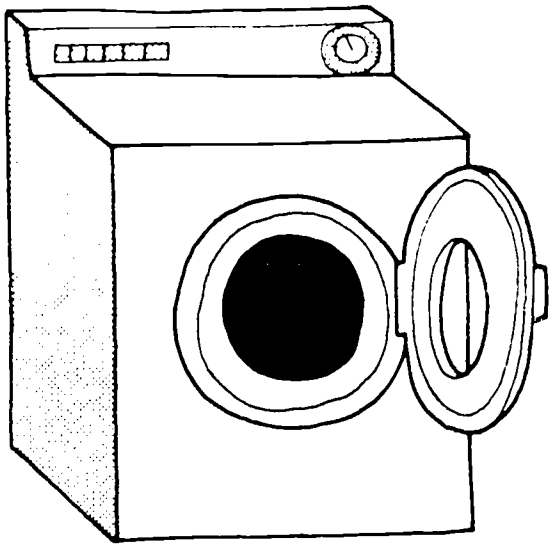
Temperature Guide

Temperature	Use For	Comments
Hot: 140°F. or above (set water-heater thermostat at 145°–150°F.)	1) Sturdy whites 2) Colorfast items 3) Diapers 4) Durable press, if heavily soiled 5) Wash and wear, if heavily soiled	Gives quickest and best cleaning, sanitizes best, but is not suitable for all fabrics.
Warm: 100°–110°F.	1) Colored fabrics that are not colorfast 2) Silks and woolens 3) Durable press 4) Wash and wear 5) Nylon, acrylic, polyester, other synthetic-fiber fabrics.	Reduces fading. Preserves finish of durable press. Tends to reduce wrinkling of fabrics containing nylon, polyester. Used most often for hand washing. Reduces shrinkage of knits and woolens.
Cold: 80°F. or cooler	1) Extra-sensitive colors 2) Very lightly soiled items 3) Rinsing — especially of durable press and other easy-care fabrics	Will not give same cleaning results as hot or even warm water. Reduces wrinkling and fading of colors. Saves hot water and fuel.

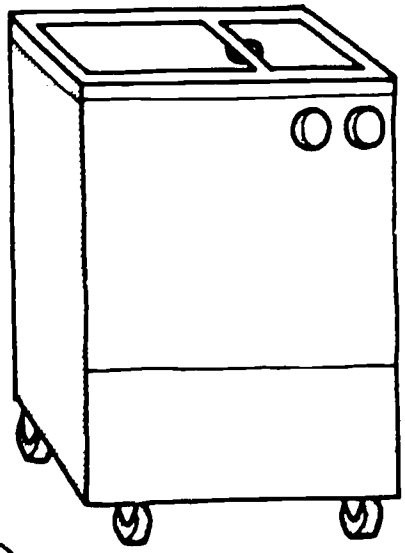
5 Basic Types of Washers



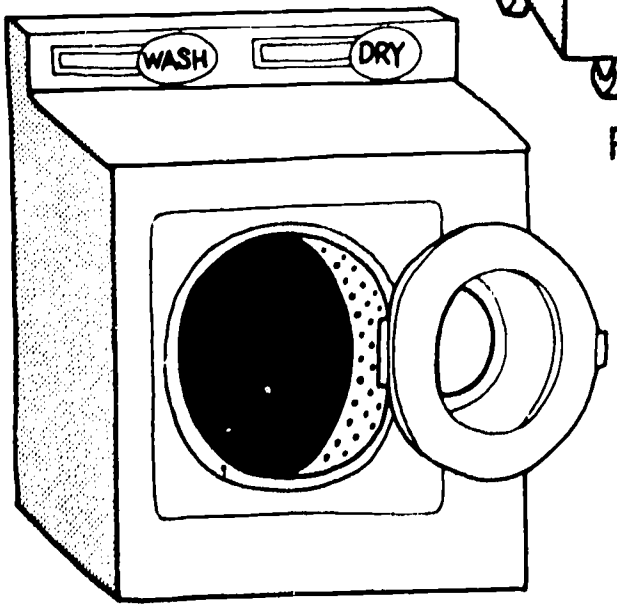
Top-Loading Automatics



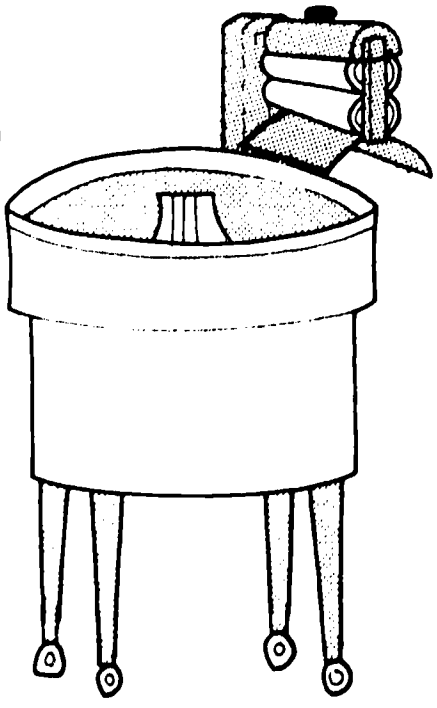
Front-Loading Automatics



Portables



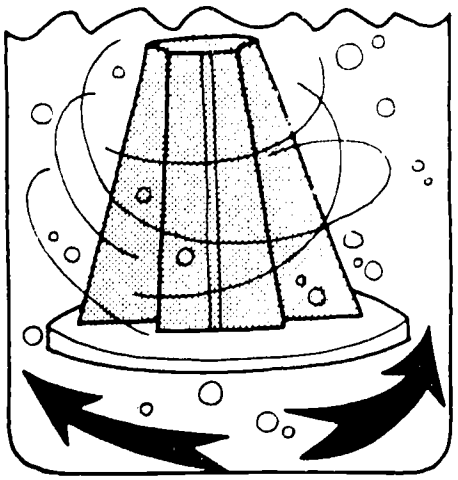
Combination Washer-Dryers



Wringer Washers

Types of Washing Action

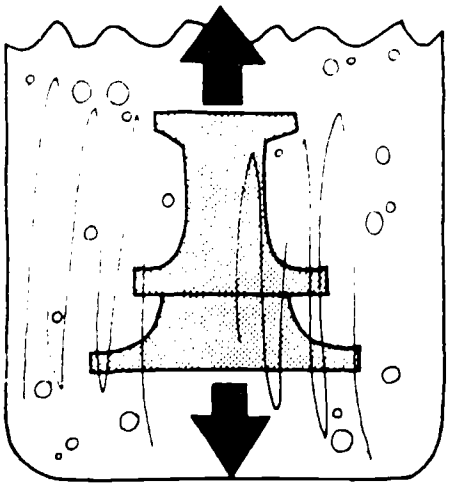
Oscillating Action



Most Top-Loading Automatics

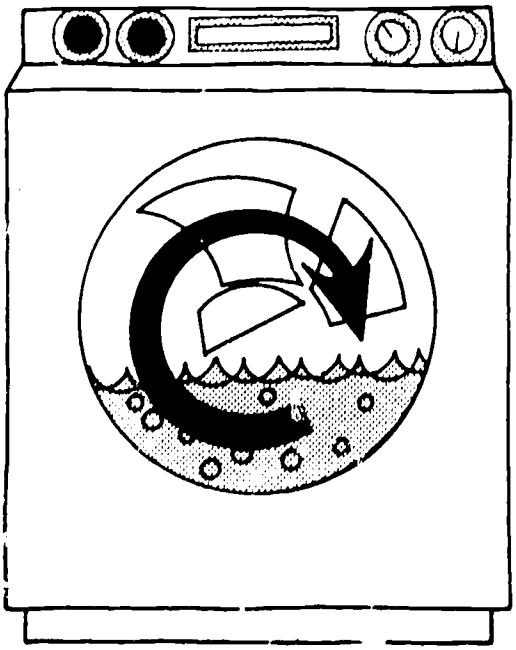
Wringer Washers

Vertical Reciprocating Action



Some Top-Loading Automatics

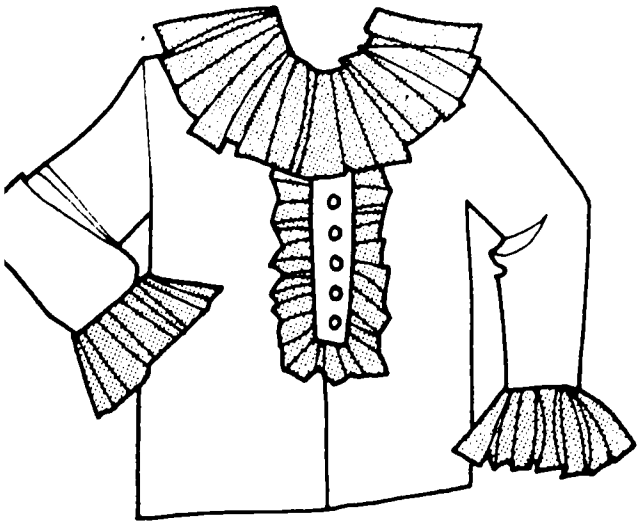
Tumbling Action



Front-Loading Automatics

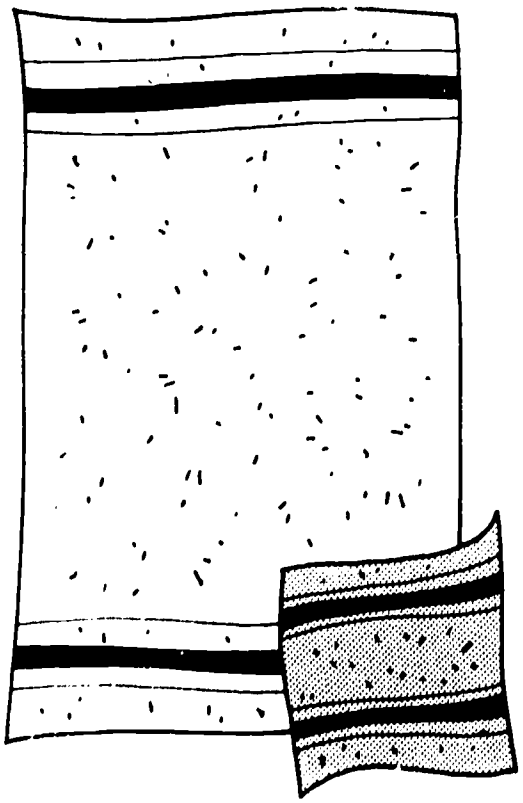
Combination Washer-Dryers

How Much Washing Action Is Needed?



WASH TIME _____

AGITATION _____



WASH TIME _____

AGITATION _____

BASIC TYPES OF WASHERS AND THEIR CHARACTERISTICS

Type of Washer	Distinguishing Characteristics	Comments
TOP-LOADING AUTOMATICS (Most widely used type)	Have opening in top of washer for loading clothes. Have a center post agitator which provides washing action. Clothes are completely covered by water for washing and deep rinsing.	Can use any type of all-purpose detergent or soap. Come in many different models. The "top of the line" models will have more automatic features. Less expensive models will require extra attention if changes are wanted from set cycles. Have varying designs and features depending upon manufacturer. They may vary in: 1. clothes capacity 2. water volume 3. agitator design 4. rate of agitation and spin (oscillations per minute and revolutions per minute). 5. number of cycles provided. 6. cycle timing
FRONT-LOADING AUTOMATICS	Have opening in front of washer for loading clothes. Achieve washing action by means of a circular drum which rotates, causing the fabrics to tumble. The clothes are lifted out of the water and then drop back into it.	Operate best with a low- or intermediate-sudsing detergent. Generally use about half as much water as top-loaders. May have fewer cycle selections than do top-loading washers.
COMBINATION WASHER-DRYERS	Have separate controls for washing and drying. Have opening in front of washer for loading clothes (like front-loader). Achieve washing and drying action by a rotating drum (like front loader).	Operate best with a low- or intermediate-sudsing detergent. Can be used as a washer only or a dryer only. Save space for those who do not have room for both a washer and a dryer. May have fewer cycle selections than top-loading washers.

Type of Washer	Distinguishing Characteristics	Comments
COMPACTS AND PORTABLES	Vary in design. Some compacts are like regular automatics but with smaller cabinets and somewhat less capacity. Some portables and compacts have a single tub. Some have one tub for washing, one for spinning and rinsing. Some have a center-post agitator. Others have an impeller at the back or side of the machine. Some compacts and portables wash and rinse automatically. Others need more manual operation.	Can use any type of laundry detergent or soap. The very small compacts and portables use less water and, therefore, require less detergent. As a general rule, start with ½ cup. Use more for heavy soil or hard water.
WRINGER WASHERS	Have a center post agitator which provides washing action. Clothes are completely covered by water for washing. Have wringer for squeezing water from fabrics after washing and after rinsing.	Can use any type of all-purpose detergent or soap granules. Require more manual operation than the automatics. May offer a choice of agitation speeds. May have a timer to stop washer automatically at the desired time.

Proper Washing Action

Kinds of Loads	Amount of Washing Action	Reason
Sturdy white and and colorfast.	10-15 minutes. Regular agitation speed. Regular spin speed.	Provides best possible cleaning for things that can withstand regular wash conditions.
Sturdy non-colorfast things.	6-8 minutes Regular agitation speed. Regular spin speed.	Reduced time helps reduce color loss.
Sturdy durable-press.	6-8 minutes. Regular agitation speed. Slow spin speed.	Reduced time helps preserve finish. Slow spin reduces wrinkling.
Delicate fabrics — including durable-press, fabrics with delicate trim, loose knits.	4-6 minutes. Slow agitation speed. Slow spin speed.	Reduced time and speed protect delicate things, help preserve special finishes, minimize shrinkage of knits. Slow spin reduces wrinkling.
Poorly constructed garments and fabrics that ravel or fray easily.	4-6 minutes. Slow agitation speed.	Reduced time and speed will reduce fraying and pulling apart of seams.
Woolens — either woven or knit.	1-3 minutes. Slowest agitation washer provides, for both washing and rinsing. Regular spin speed.	Reduced time and speed reduce shrinkage and felting. Regular spin removes more moisture and speeds drying.

Chart 10b

10.1 **DEMONSTRATION:** To illustrate how washing action affects fraying of fabrics.

SUPPLIES:

Automatic washer with a normal cycle and a gentle cycle

Fabric A: ½ yard of fabric which ravels easily (e.g., homespun, or some other fabric which is loosely woven. Acetate or nylon taffeta will also work.)

Fabric B: ½ yard of fabric which is tightly woven or knit and will not ravel easily. (A polyester-cotton blend, polyester knit, or nylon jersey should be suitable.)

All-purpose detergent
Measuring cup
6 bath towels or items of similar bulk

INSTRUCTIONS:

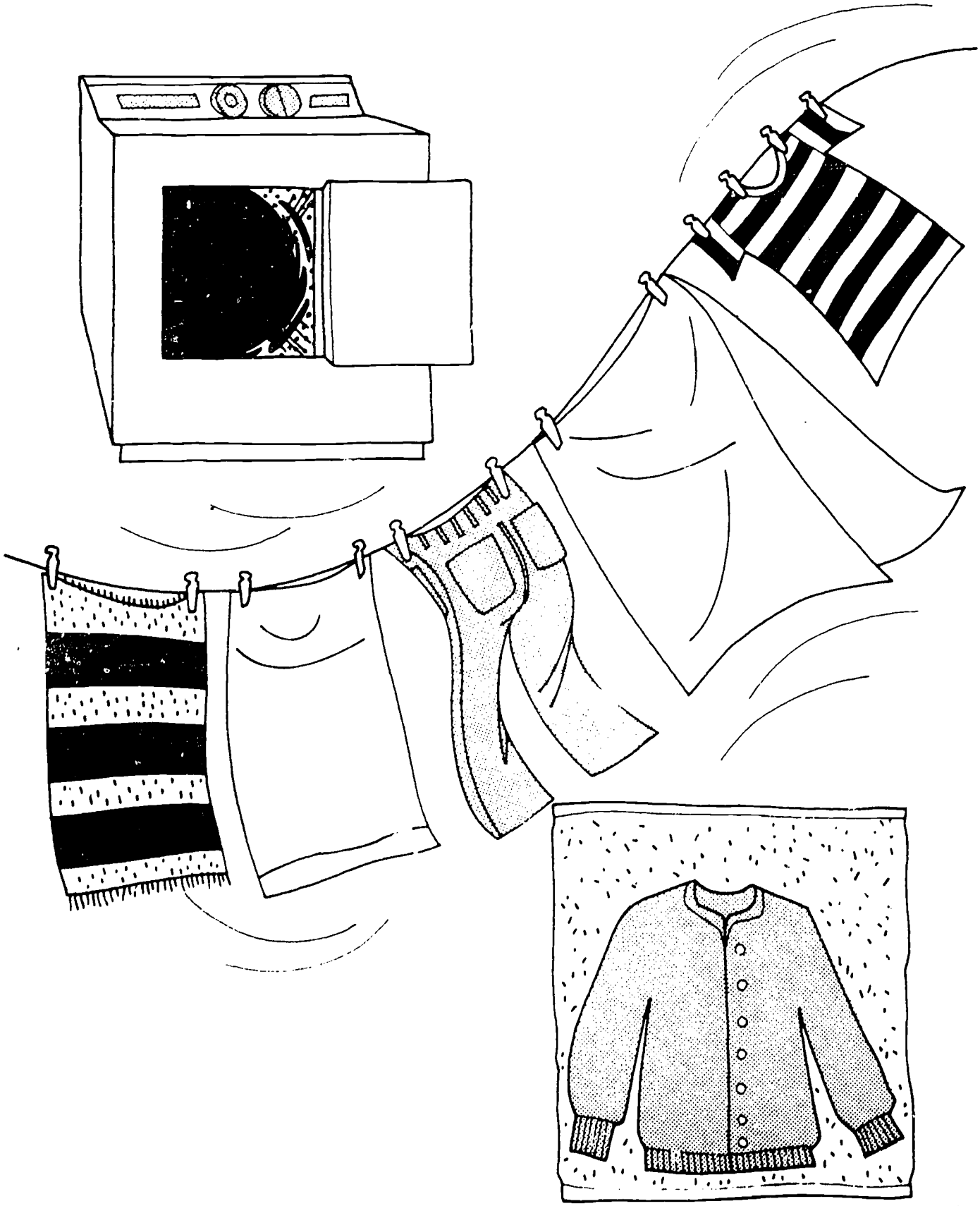
Steps 1-3 should be done before class period to save time.

1. Cut fabric A into 4 equal pieces (If fabric is 36" wide, each piece will be approximately 18"x 9".)
2. Sew the first 2 pieces together, making a 5/8" lengthwise seam. (Don't use selvage side of fabric, because seam edges should be unfinished.) Repeat, using the other 2 sections of fabric A, so that there are 2 identical pieces of fabric with an unfinished lengthwise seam in the center.
3. Repeat steps 1 and 2 with fabric B.
4. Fill washer with warm water and add the recommended amount of all-purpose detergent. Add bath towels and 1 piece of both fabric A and fabric B.
5. Wash this load for 10 minutes, using a normal cycle. Rinse and remove fabrics from washer.
6. Repeat step 4, using remaining pieces of each fabric.
7. Wash this load for 4 minutes, using gentle cycle. Rinse and remove fabrics from washer.
8. Smooth the 4 pieces of fabric and examine the amount of fraying on each seam. Compare the 2 pieces of fabric A to show how the amount and speed of wash action can affect seam fraying. Then compare the performance of fabric A with fabric B. This will illustrate that only certain fabrics require gentle washing conditions.

Why Rinse Clothes?

AV–11a

Drying Methods



Points to Remember...
Hand Laundering

AV–11c

Basic Directions for Rinsing

Time	Generally 2 to 5 minutes of agitation during the deep rinse is enough. The shorter time is best for delicate things. Allow only 1 minute for woolens.
Temperature	Warm or cold can be used for regular family loads of clothes. Cold water reduces wrinkling of synthetic fibers (nylon, acrylic, polyester, durable-press blends).
Speed of Agitation	All automatic-washer cycles provide the same speed of agitation for rinsing as for washing.
Number of Rinses	All automatic washers provide enough rinsing in the cycles as they are designed. Only in unusual cases would you need to use an additional rinse period. Some washers provide an optional second deep rinse to take care of these situations. When washing by hand or using a wringer washer, always use at least two rinses.

Ways To Dry Clothes

	Advantages	Disadvantages
Tumble Drying in a Dryer	Saves time and effort. Makes clothes soft, sometimes fluffy. Smooths clothes, removes wrinkles (particularly from synthetic-fiber fabrics and durable press) Is not dependent upon the weather.	Cost of the dryer. Cost of operation. Need for space for the dryer Use of energy — electricity, gas, coal, etc. Heat given off in summer
Line Drying — Outdoors	Gives clothes a fresh smell. Enables large items (bedspreads, blankets) to dry thoroughly with no agitation or tumbling action. Equipment costs little (clothespins, clothes line, etc.	Dependent upon weather Clothes are stiffer than when tumble-dried. Clothes sometimes get dirty (in an industrial community, for example).
Line Drying — Indoors	Not dependent upon weather Convenient when only 1 or 2 small items are washed	Clothes take long time to dry. Good space for drying must be available. It may be inconvenient to have clothes hanging indoors. Clothes are stiff because there is little air movement.
Flat Drying	Helps prevent shrinkage. Especially good for wool sweaters and some leather items.	Space for drying must be available. Items dry slowly.

Chart 11b

LAUNDRY REQUEST

TRADE AREA

NO.	ITEMS
	UNIFORMS
	LAB COATS
	BLUE SMOCKS
	BLACK SMOCKS
	SHIRTS
	PANTS
	APRONS
	TOWELS
	WASH CLOTHS
	SHEETS
	PILLOW CASES
	BLANKETS

EMPLOYEE

DATE RECEIVED

DATE REQUESTED

_____ A. M. ___ P. M.

VE 609 230