Florida Cooperative Extension Service
Institute of Food and Agricultural Sciences
University of Florida, Gainesville
John T. Woeste, Dean for Extension
4-H Fundamental Fashion Formula — Level I

Dear 4-H’er

Do you ever get hot or cold when you are at school or play? Have you ever thought about the clothing you wear? Did you know clothing is related to how comfortable you feel?

Much has been written about the energy shortage. Energy is used to produce your clothing. Energy is also used to care for your clothing.

The 4-H Fundamental Fashion Formula — Level I project will help you learn how to:

- select clothing to keep cool.
- select clothing to keep warm.
- care for clothing by selecting the products to use.

Energy can be saved (turn thermostat setting lower in the winter, higher in the summer) by dressing appropriately for the season. Energy can also be saved by properly caring for your clothing.

Have fun while learning.

Sincerely

Nadine Hackler
Professor,
Extension Clothing Specialist

Dress to Keep Cool

Because of the energy shortage, thermostats in many buildings and homes have been set at 78°F (25.6°C) or higher in the summer. Also because of the energy shortage, energy costs continue to increase.

You can select clothing that will be more comfortable at school or play when thermostat settings are turned higher. For instance, your body gets “hot”:

- when you play.
- when you eat.
- when absorbing heat from the environment.

Your garments should allow your body heat to escape. Choose clothes that permit perspiration to be absorbed. Evaporation occurs when perspiration becomes a vapor. This evaporation process is affected by your clothing. When evaporation occurs, you will feel cooler.

Fiber and Fabric Construction

Some fibers are more absorbent than others. They are cotton, linen, silk, wool and rayon. When fibers absorb perspiration, it evaporates and you will feel cooler.
Other fibers such as nylon or polyester may have a finish to make them more absorbent. Check the label.

How a fabric is constructed is important. Fabrics need to "breathe". A fabric can breathe only if it has air spaces. Open weaves and open knits allow for ventilation. Smooth textures are cooler than rough ones. Shiny fabrics are cooler than dull ones.

**Color**

Color is related to your comfort in hot weather. If playing outside, choose white or light colors. These colors reflect the sun’s rays. You will feel cooler.

Cool colors will make you feel cooler. They remind you of water, trees and shadows. These colors are the blues, greens and purples.

**Design and Fit**

How a garment is designed is important. For example:

- air circulates better when garments have large necks, armholes and legs.
- skirts and dresses are cooler.
- sleeveless garments are cooler.
- one layer of outer garments is cooler.

You need to think about how the garment fits. Garments fitting too tightly will be hot. Looser fitting ones will be cooler.

**Inner Garments**

Garments worn next to the skin are important to your comfort. Select those that are 100% cotton or part cotton for greatest comfort. Socks that are part or all cotton are more absorbent. Wear cotton sport socks with sport shoes for greater comfort.

**Accessories**

The type of accessories you wear may contribute to your comfort. To be cooler:

- wear a hat when in the hot sun.
• wear sandals.

Sandals are cooler than closed shoes
• eliminate belts or wear only narrow ones.

Cleanliness
Would you believe that clean clothes are cooler than dirty ones? Dirt and body oils fill up air spaces, and the fabric cannot “breathe”.

Clean clothes are cooler than soiled

Selection of Sleepwear
Select sleepwear that will keep you cool, such as:
• loose-fitting sleepwear.
• no collars or sleeves.
• lowered necklines.
• short pajama pants.
• wearing pajama top outside pants.
• lightweight, open-toed slippers.
• cotton or part cotton undergarments.
• nightgowns or nightshirts.
• short nightgowns or nightshirts.

Layering
The secret of keeping warm is in layering your clothing. Layering keeps your body heat in and cold air out.

There are three layers of clothing to think about. The breathing layer is next to your skin. These fabrics should be open weave, or lightweight and absorbent.

The insulating layer holds in body heat. These fabrics should be thick, resilient and absorbent.

Dress to Keep Warm
During cooler weather, many thermostats are set at 65°F (18.3°C) or lower to conserve energy. When you are cold you are uncomfortable. Therefore, you need to select clothing that will keep you warm.

The protecting layer retains body heat and keeps out cold, moist air. Select fabrics that are closely woven or knitted and that have smooth finishes.
Fibers and Fabrics
The warmest fibers are wool, cotton and acrylic. The warmest fabrics are those that:
• are quilted.
• have a nap or pile.
• are thick.
• have a close weave or knit.

Cleanliness
Clean garments are warmer than soiled ones. Soil and body oils close air spaces. When air spaces are closed, insulating powers are lost.

Color
Warm colors are reds, oranges, and yellows. They remind you of the sun and fire. Dark colors are also warmer. They absorb the sun's rays when you are outside.

Design and Fit
The design and fit of a garment contribute to how warm you will feel. To feel warmer; select close-fitting necklines, cuffs and sleeves, bands at ankles and waistlines.

Suggestions for Keeping Warm—Girls
• Wear long-sleeved blouses or dresses.
• Wear socks.
• Wear closed shoes or boots.

Garments that are too tight allow body heat to escape. There is no place for warm body heat to circulate. You need to allow for air spaces.
• Add a cardigan sweater, vest or dickey.

• Wear a blouse over a turtleneck sweater.
• Wear a tunic, smock or apron.

Suggestions for Keeping Warm—Boys
• Tuck undershirt into undershorts.
• Wear part wool or part cotton socks.
• Wear tightly woven or knitted shirts.

• Wear cotton or wool flannel shirts.
• Wear corduroy pants and shirts.
• Wear a turtleneck sweater under a shirt.

Caring for Clothes

The proper care of clothing prolongs its life. Laundering of clothes uses energy. You can help reduce this energy usage.

Clothes that are soiled need to be laundered. Place in hamper or clothes basket.

Unsoiled clothing worn only a short time should be:
• hung in the closet.
• folded and placed in a drawer or on a shelf.
A “heap” of clean clothing requires a lot of energy to remove the wrinkles. Relaundering and ironing are necessary. This ages the clothes needlessly.

Spots and stains need to be removed immediately. Be sure to tell the person responsible for the laundry:
- that there is a stain.
- where the stain is located.
- what the stain is.

The use of laundry products can be confusing. Let’s learn something about them so you will be able to care for your clothing.

**Detergents**

The most important laundry product is the detergent. Detergents are made to:
- remove,
- emulsify,
- dissolve, and
- suspend soil in a washing solution. Detergents contain two important ingredients—surfactants and builders.

The purposes of surfactants are to:
- improve the wetting ability of water.
- assist in loosening and removing soil.
- emulsify soil.
- suspend and hold soil.

The purposes of builders are to:
- make the surfactant more efficient.
- prevent water hardness from combining with soils.
- help disperse and suspend dirt.
- maintain the desired alkalinity.

Detergents come in a variety of forms—liquids, powders and tablets. They may be low, medium or high sudsers. It is the detergent that gets the clothes clean, not the amount of suds.

Heavy-duty detergents are designed for machine washing. Light-duty detergents are for hand washing.

There are two types of detergents—phosphate and non-phosphate. On the label, phosphate will be listed as phosphorus. Phosphate detergents are the most effective in cleaning clothes.

**Laundry Additives**

There are several products that can be used to assist in laundering. Each serves a specific function.

The purposes of bleach are to:
- help remove soil and stains.
- help remove color from soil and stains.
- help clean bleach-safe colors.
- help whiten whites.
- serve as a deodorizer.
- serve as a disinfectant.

A bleach is designed to be used with a detergent. It may be liquid or granular.

The purpose of an enzyme pre-soak is to loosen fresh soil and stains. They are not designed to be used in place of a detergent. They may be granular or a spray.
The purposes of a fabric softener are to:
- soften fabrics.
- make fabrics fluffier and bulkier.
- reduce static cling.
- minimize wrinkling.
- make pressing easier.
- impart a fragrance.
- reduce drying time.

Fabric softeners may be liquid or disposable sheets. They may be:
- part of the detergent.
- added at the beginning of the washing cycle.
- added at the rinse cycle.
- added in the dryer.

Summary

When using any laundry product as an additive, it is important to carefully read and follow label directions. In caring for your clothing, always carefully read and follow permanent care label directions. The best brand, product and additive is the one that performs for you.
Project Requirements

To complete this project, do the following activities. Place records of your work in a notebook.

**Dress to Keep Cool**

Do Activity 1.
Do Activity 2 or 3.

1. Select clothing from your closet or drawer for the following activities:
   a. playing ball
   b. bicycle riding
   c. watching TV
   d. going to the beach or swimming pool
   e. going to school

For each outfit answer the following:
   What is the fiber content?
   What is the color?
   What is the texture?
   What is the design?

Based on these questions, rate the garment as to how cool it would feel. If not a good choice, what would make it a good one?

2. Collect five fabric swatches. Mount. For each fabric tell if it would feel cool or warm based on:
   a. fiber content
   b. color
   c. texture
   d. what type fabric is it?
      - breathing
      - insulating
      - protecting

3. Collect five colored pictures of garments you like. Mount. For each, tell if the garment would feel cool or warm based on:
   a. color
   b. texture
   c. design or fit

**Dress To Keep Cool and Dress To Keep Warm**

Do Activity 1 or 2.

1. Observe one animal as to how it stays cool or warm. Discover as much as possible. How does it stay cool or warm? What does it eat? Where does it live? What “body covering” does it have? Compare the similarities and differences to how you keep cool or warm.

2. Describe and evaluate one person’s clothing for your project report. In a group session, evaluate the clothing as to how cool or warm it would feel.

**Caring For Your Clothes**

Do Activity 1.
Do Activity 2 or 3.

1. Select a job or activity that deals with caring for your clothes which uses energy such as washing, drying, or iron-
ing. Find out how these tasks were done in your grandparent's day. Compare how the job or activity is done today and record in your project report.

2. Go to the store and look at five detergents. Find and record the following:
   a. name
   b. amount of phosphorous
   c. liquid, powder, tablet
   d. amount to use for each load
   e. water temperature recommended

3. Interview three individuals and record the following in your project report:
   a. How many loads of laundry they do per week?
   b. Which detergent they use and why?
   c. Ways they are trying to save energy when doing the laundry.

Project Requirements

Dress to Keep Cool
   Complete Activity 1
   Do Activity 2 or 3

Dress to Keep Warm
   Complete Activity 1
   Do Activity 2 or 3

Dress to Keep Warm or Cool
   Do Activity 1 or 2

Caring for Your Clothes
   Complete Activity 1
   Do Activity 2 or 3

Show and Tell at least two other persons.
Give at least one demonstration or talk.
4-H FUNDAMENTAL FASHION FORMULA — LEVEL I

Project Report
Year ________

Name ________________________________________
Route or Street Address ________________________________________
City and State ___________________________ Zip Code __________
Parent’s Signature ________________________________________
Age ________ Grade in School ________ Year in 4-H ________ Year in this Project ________

**ATTACH ADDITIONAL PAGES, IF NEEDED**

What did you learn about:
Dressing to Keep Cool? ________________________________________

Dressing to Keep Warm? ________________________________________

Caring for Your Clothes? ________________________________________

What did you learn about laundry additives? Give one example. ___________________________

What did you enjoy most about this project? ________________________________________

What did you learn about saving energy? ________________________________________

What did you learn about using detergents? Give one example. ___________________________

How did you help others? ________________________________________

What demonstrations (D), exhibits (E), and/or talks (T) did you give?

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11
4-H Story. Write a story about this project. Include why you took the project, what you learned, problems you had, and what was the most fun.

**Attach reports for activities**
Florida Cooperative Extension Service
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John T. Woeste, Dean for Extension
Dear 4-H'er:
The purpose of the 4-H Fundamental Fashion Formula — Level II project is to:
• create awareness of how to dress cooler or warmer.
• help you learn to dress to feel more comfortable.
• help you learn about washday problems.

Before beginning this level, review Level I information and the activities you completed. Now, you are ready to add to your knowledge about:
• dressing to meet changing temperatures.
• developing skills and practices in selecting clothing for comfort.

Hopefully, you will begin to take some responsibility for the care of your clothing.

Sincerely,

Nadine Hackler
Professor
Extension Clothing Specialist

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Dress to Keep Cool

Turning the thermostat up or off is becoming a common practice in many homes. This practice is one way to reduce energy bills. You probably like to be involved in outdoor activities during hot, humid weather. To feel comfortable, you need to think about the clothes you wear.

• Select clothing that will allow body heat to escape.
• Select clothing that prevents the gaining of heat from the sun.
• Select clothing that breathes.

Body heat is generated in two ways:
• from activities, such as exercising.
• from the environment, such as the sun.

How body heat is transferred is related to the clothes you wear.

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Heat Exchange

Heat exchanges between your body and the environment by:

Radiation. Heat from the sun increases body heat.

Convection. Heat from hot air/hot water increases body heat (such as a hot shower).

Conduction. Heat from surfaces increases body heat (such as a vinyl chair).

Evaporation. Heat produces sweating. As sweat (perspiration) evaporates, body heat is decreased. This is the body’s primary way of keeping cool. You need to learn to select clothing that will permit moisture to be absorbed in the fabric.

Fiber and Fabric Construction

In order to feel cooler, you need to select fibers that are absorbent. Cotton, linen, silk, wool and rayon are absorbent fibers. Man-made fibers, except rayon, are not absorbent. Some may have a special absorbent finish. Check the label.

If moisture “sets” on a fabric, it will make you feel “clammy.” This process is called “wicking.” Man-made fabrics that wick are not as cool as those fabrics that are absorbent.

Soil-release finishes increase absorbency. Stain- and wrinkle-resistant finishes decrease absorbency.

In order to feel cooler, select fabrics that are:
• open weave or open knit.
• see-through.
• lightweight.
• smooth textures.
• shiny.
Color
The color of your clothing is related to how cool you will feel. Select these colors:
- white and light colors (reflect sun’s rays).
- cool colors (remind you of water, trees, shadows) — blues, greens, purples.

Design and Fit
Clothing design and fit affects how cool you will feel.
- Loose-fitting garments are cooler.
- Large necklines, armholes and legs allow air to circulate.
- Unlined garments are cooler.
- Unbelted pants and skirts are cooler.
- Overblouses and shirts worn outside are cooler.

- Straight-legged pants are cooler.
- Fuller skirts and pants are cooler.
- Skirts are cooler than pants.
- Sleeveless garments are cooler.
- Short sleeves are cooler.

Inner Garments
How absorbent inner garments are contributes to how cool you will feel. Select:
- 100% cotton or part cotton undergarments.
- socks that are part or all cotton.
- half-slips.
- cotton undershirt or slip if wearing a non-absorbent fiber.

Accessories
To be cooler consider selecting the following accessories:
- Wear a hat.
- Carry an umbrella.
- Wear sandals.
• Wear tie or scarf loosely tied.
• Wear small, lightweight jewelry.
• Wear narrow belts.

**Cleanliness**
Clean clothes are cooler. Body oils and dirt prevent ventilation by closing air spaces.

Remember — to feel cooler, select:
• fibers and fabrics that are absorbent.
• open weave or open knit construction.
• smooth textures.
• lightweight fabrics.
• light and cool colors.
• loose garments.
• clean garments.

**Dress to Keep Warm**
Most places have lowered thermostats in cooler weather to reduce energy costs. Therefore, it is important to dress so you will feel warm and comfortable.

**Layering**
The layering of clothing is the secret to feeling comfortable in cool, humid weather. Layering allows you to keep body heat in and cool air out. Layering permits you to add or take off a garment or two in order to adjust to different temperatures.

The **breathing** layer is next to your skin. It needs to be lightweight, open weave or knit and absorbent. These fabrics will pick up moisture, assist in evaporation and filter out excess body heat.

The **insulating** layer should be loosely woven or knitted fabrics of yarns that are thick, resilient, and absorbent. Good choices would be wool or cotton fabrics, high-bulk fabrics, quilted fabrics, napped fabrics or thick fabrics with texture. These fabrics will hold escaping body heat in and force it into dead air space.

The **protecting** layer should be closely woven or knitted fabrics of firmly twisted yarns and should have smooth textures. These fabrics retain escaping body heat and keep out the cold, moist air.
As you are selecting your fabric layers, you need to consider:
- fiber and fabric construction.
- color.
- design and fit.
- cleanliness.

**Fiber and Fiber Construction**

The warmest fibers are wool, cotton and acrylic. Generally speaking, the natural fibers (wool, linen, cotton, silk) are resilient and absorbent. The warmest fabrics are those that:
- are quilted.
- are closely woven.
- have a nap or pile.

- are thick.
- are closely woven.

Closely woven fabrics are warmer than closely knit ones.

**Color**

Warm colors give you a feeling of warmth. The warm colors are reds, oranges, and yellows. Dark colors absorb the sun's rays and are warmer.

**Design and Fit**

How a garment is designed and how it fits you determines how warm you will feel. To feel warmer select:
- close-fitting necklines and collars.
- close-fitting cuffs.
- close-fitting waistlines.

- straight legged pants.

The fit of the garment should be loose enough to allow for air space. If it is too tight or small, no body heat can be trapped. If it is too loose, there is too much air space for the body to heat.

**Suggestions for Girls**

To dress warmer, consider some of the following:
- a camisole tucked into panties.
- a cotton or part cotton T-shirt under a blouse or shirt.
- regular panties (not bikinis).
- opaque tights.
- lined pants, pant liners, leg warmers or thermal underwear under slacks.
- long sleeves with fitted cuffs or wrists.
- a blouse or other sweater over a turtleneck sweater.
- slacks.
- boots with skirts.
- straight-legged pants.
- garments with definite waistlines.
- closed shoes and boots.
- thicker soles.
- a full-length slip.
- slacks inside boots.
- belts.
- a vest, sweater, or shawl.

- a hat.
- gloves or mittens.
Suggestions for Boys
To dress warmer think about wearing:
- briefs, rather than boxer shorts.
- thermal underwear.
- T-shirt or undershirt tucked into under-
  shorts.
- over-the-calf socks.
- part wool or cotton socks.
- cotton or wool flannel shirts.
- corduroy shirts or pants.
- turtleneck sweater under a shirt.
- sweater over a shirt.
- ties.
- wider belts.
- straight-legged pants.
- vests.
- boots.
- crepe or rubber soled shoes.
- hats.
- muffler.
- gloves.

Cleanliness
Keep your clothing clean in order to feel
warmer. Garments that are dirty lose their in-
sulative power to trap body heat.

Remember — the secret to keeping warm
is to wear layers of clothing so that body heat
can be filtered and trapped. The outside layer
(protecting) needs to keep out the cold air.

Caring for Clothes
In Level I, you learned about laundry prod-
ucts and additives. Now you should be ready
to learn about how to prepare clothing for
laundering. You need to become aware of
some common laundry problems.

Pre-Wash Preparation
There are several things that need to be
done to prepare garments for the laundry.
1. Empty all pockets.
2. Zip all zippers.
3. Turn down cuffs.

4. Unbottle buttons.
5. Hook all hooks.
6. Detach unwashable trim or buttons.
7. Mend rips and tears.
8. Pre-treat stains or heavy soil.

9. Turn man-made (such as polyester
and nylon) and napped (such as cor-
duroy) garments wrong side out.

Sorting
Careful sorting of clothes is essential if
you want a clean, lint-free wash. Be sure to
sort according to:
- color — Wash whites with whites.
- amount of soil — Wash light soiled
  with lightly soiled. Wash heavy soiled
  with heavily soiled.
- fabric type — refers to recommended
  procedure on care
  label, such as those
  that can be washed in
  hot water.
- tendency to lint — refers to being sure
  lint givers (such as
towels) are not
  washed with lint
  receivers (such as
  corduroys or dark
  colors).
Incorrect sorting creates washday problems that require more work and energy to remedy. Sometimes the problems cannot be corrected.

**Dye color transfer** is caused when a colored garment, such as a red sock that bleeds color, is washed with white or light-colored garments. This problem may or may not be correctable. What to do to try to solve the problem:
- Rinse in cool water.
- Use bleach, if safe for fabric.
- Use a pre-soak product.
- As a last resort for whites, use a color remover.

**Dingy gray** garments are caused by improper washing procedures. The frequent cause is overloading the washing machine, improper sorting and not using laundry products correctly. If your clothes are dingy, try to remove by:
- increasing the amount of phosphate detergent.
- increasing the water temperature, if possible.

The best practice is to prevent graying in the future by:
- sort clothes carefully.
- use the recommended water temperature.
- use the recommended amount of detergent.
- use a water conditioner, if you have hard water.

**Permanent press wrinkles** are caused by overloading the washing machine or dryer, or by not removing clothes immediately from the dryer. If you have these wrinkles, you may not be able to remove them. You can try to remove them by:
- re-washing, using the recommended water temperature and not overloading.
- pressing with a wet press cloth.
- press, using diluted white vinegar solution (after you test for discoloration on an inside seam edge).

To prevent permanent press wrinkles in future washings, remember to:
- use a cold rinse cycle.
- use a fabric softener.
- avoid overloading the washing machine or dryer.

- avoid overdrying.
- avoid using a "hot" dryer.
- remove from the dryer and hang immediately.

**Lint** is caused from incorrectly sorting clothing items or from a paper tissue or towel left in a pocket. You can usually remove this lint by patting or brushing the garment with masking tape.

The best practice is to prevent lint from occurring. You can do this by:
- correctly sorting.
- using enough detergent.
- using correct water level.
- using fabric softener.

**Remember** — the most important step to avoid laundry problems and wasting energy is to carefully read and follow directions on:
- laundry products.
- laundry additives.
- sorting.
- permanent care labels.
Project Requirements

This level has been designed for you to learn more about how to dress to feel cooler, how to dress to feel warmer, and washday problems in caring for your clothing, while conserving energy. Place your work in a notebook.

Dress to Keep Cool

Do Activity 1.
Do Activity 2 or 3.

1. Think about the clothes you like to wear when it is hot. List five outfits. Answer the following in your report.
   a. Describe the garments.
   b. Identify the fiber content.
   c. Identify the color.
   d. Identify the texture.
   e. Identify the design and the way it fits you.
   f. Identify the activity where you could wear the outfit.
   g. How could the outfit be made cooler?

2. If you could purchase one complete outfit (inner garments and accessories, too) to feel cooler while playing outside, describe what it would be. How would it feel "cooler"?

3. Two of your cousins or friends from Chicago plan to visit you for a week in July. They need some help as to what kinds of clothes to pack. Write brief paragraphs describing the kinds of activities you have planned for them and the kinds and types of clothing they will need to feel cool for each activity.

Dress to Keep Warm

Do Activity 1.
Do Activity 2 and 3.

1. Think about the clothes you like to wear when it is cooler. List five outfits. Answer the following in your report.
   a. Describe the garments.
   b. Identify the fiber content.
   c. Identify the color.
   d. Identify the texture.
   e. Identify the design and the way it fits you.
   f. How could the outfit be made warmer?

2. If you could purchase one complete outfit (inner garments and accessories) to feel warmer for walking to school, describe what it would be. How would it be "warmer"?

3. Two of your cousins or friends from Chicago plan to visit you for a week in July. They need some help as to what kinds of clothes to pack. Write brief paragraphs describing the kinds of activities you have planned for them and the kinds and types of clothing they will need to feel cool for each activity.
Dress To Keep Warm or Dress To Keep Cool

Do Activity 1 or 2.
Do Activity 3.
1. Plan and present a fashion show for your club, a homemaker's club, or a local store. Garments should be described as to how they would make you feel warm or cool. Be sure to include the type of activity planned for each garment—or—Ask each club member to model one of their own garments for walking to school in the summer or winter. Describe each as to how they would make you feel cooler or warmer. Have a panel of judges select the best example.
2. Collect and mount two different pictures for each of the following:
   a. school shoes
   b. hat
   c. shirt
   d. sweater
   e. pants
   f. belt
   g. short jacket
   For each set of pictures answer the following questions as to which would make you feel warmer or cooler based on:
   a. color.
   b. texture.
   c. design.
   Explain the reason for your choice.
3. For 10 days, record the clothing you wear and evaluate how comfortable you felt according to the following chart:

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<th>Activity or Occasion</th>
<th>Temperature</th>
<th>Were You Comfortable?</th>
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How Could You Change Your Clothing To Feel Comfortable?
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<th>Day</th>
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**Care For Your Clothes**

Do Activity 1 or 2.
Do Activity 3.

1. During a two-week period, be responsible for the pre-wash preparation of the family laundry. In your report, record such activities as:
   - zipping zippers
   - emptying pockets
   - detaching unwashable trims or buttons
   - mending rips and tears
   - pretreating stains or heavy soil
   - unbuttoning buttons
   - turning down cuffs
   - hooking all hooks
   - turning man-made fabrics wrong side out

2. During another two-week period, be responsible for the sorting preparation of the family laundry. In your report, record such activities as:
   - sorting by color
   - sorting by fabric type
   - sorting by amount of soil
   - sorting by tendency to lint

   Did any washday problems result from your “sorting preparation”? If so, describe the problem as well as the method used to correct it. Be sure to fully describe how you sorted the family laundry.

3. Interview three young adults and three older adults to find out common laundry problems and experiences associated with inadequate pre-wash and sorting preparations. Identify the problem. Describe the problem. Describe how they were able to correct (or not correct). Describe what you have learned from this activity to help you in the care of clothes.

**Project Requirements**

**Dress to Keep Cool**
- Complete Activity 1
- Do Activity 2 or 3

**Dress to Keep Warm**
- Complete Activity 1
- Do Activity 2 or 3

**Dress to Keep Warm or Cool**
- Complete Activity 3
- Do Activity 1 or 2

**Care for Your Clothes**
- Complete Activity 3
- Do Activity 1 or 2

**Show and Tell** at least four other persons.
- Give at least one demonstration or talk.
4-H FUNDAMENTAL FASHION FORMULA — LEVEL II
Project Report
Year ________

Name ____________________________________________________________

Route or Street Address ____________________________________________

City and State ____________________________ Zip Code ________________

Parent's Signature ________________________________________________

Age _______ Grade in School ______ Year in 4-H ______ Year in this Project ______

**ATTACH ADDITIONAL PAGES, IF NEEDED**

What did you learn about:
Garments, fiber content, color, texture, design and fit and making an outfit cooler or warmer with regard to dressing to keep cool or warm?

____________________________________________________________________

____________________________________________________________________

Caring for your clothes with regard to pre-wash or sorting preparation?

____________________________________________________________________

____________________________________________________________________

Give an example of one clothing care problem you experienced and how you solved it (lint, dingy gray, dye color transfer, permanent press wrinkles, etc).

____________________________________________________________________

____________________________________________________________________

What did you enjoy most about this project?

____________________________________________________________________

____________________________________________________________________

What did you learn about conserving energy?

____________________________________________________________________

____________________________________________________________________

How did you help others?

____________________________________________________________________

____________________________________________________________________

What demonstrations (D), exhibits (E), and/or talks (T) did you give?

Title ___________________ Where _______________ Date ____________

____________________________________________________________________

____________________________________________________________________
4-H Story. Write a story about this project. Include why you took the project, what you learned, problems you had, and what was the most fun.

**Attach reports for activities**

Prepared by: Nadine Hackler  
Professor  
Extension Clothing Specialist

and

Wilma B. Gordon  
Home Economics Information  
Specialist - Energy

January 1983

This public document was promulgated at a cost of $450.83, or 26 cents per copy, to provide information on dressing cooler, dressing warmer, and how clothing care is related to energy use. 1-1.7M-83

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4-H FUNDAMENTAL FASHION FORMULA

LEVEL III

Florida Cooperative Extension Service
Institute of Food and Agricultural Sciences
University of Florida, Gainesville
John T. Woeste, Dean for Extension
4-H FUNDAMENTAL FASHION FORMULA—LEVEL III

Dear 4-H’er:

As you begin Level III of the 4-H Fundamental Fashion Formula, review the information in Levels I and II. It would also help you to review the activities you completed.

Level III of this project has been designed for you to:

- learn laundry techniques to save energy.
- learn about stains and how to remove them.
- learn how to care for clothing and be responsible for this job.

Sincerely,

Nadine Hackler
Professor
Extension Clothing Specialist

Caring for Clothes

Today, more than ever, it is important for teenagers to learn clothing care. Why is this true?

1. More and more, both parents are working and you may need to be responsible for assisting with or doing the family laundry.
2. Clothing is more expensive. You may have fewer garments. You may not be able to discard stained clothing.
3. Energy costs are escalating. In order to save energy and have clean garments, you need to learn how to care for clothing properly.

Fibers and Energy

What about the controversy over energy requirements for natural versus man-made fibers? Natural fibers (cotton, linen, silk, wool) may require less energy to manufacture, but more to finish and maintain. Man-made fibers (such as polyester, nylon, acrylic, rayon, acetate) may require more energy to produce the fiber, but less energy to finish and maintain. Some man-made fibers are petroleum based. They use about 1% of the nation’s petrochemicals.

Energy costs are increasing. Therefore, ways to conserve energy are becoming more popular. About 80% of all laundering is done in the home. Home laundering requires energy for water heating, washing and drying.

There are several factors related to saving energy when doing your laundry. They are:

- water temperatures.
- laundry products.
- laundry additives.
- laundry practices.

Water Temperature

Most of the energy for laundering clothes is used for heating the water (about 85%). A washing machine can run about 50 cold water wash cycles on the energy needed to do one hot water wash.

Cold Water Wash

Cold water wash is sometimes recommended as a way to reduce energy use. Good laundering practices are always important. These practices become especially important for cold water washing, since the removal of soil may be more difficult to accomplish. Extra considerations may be needed for satisfactory results. Think about the following:
• Check the water temperature. Temperatures below 50°F (10°C) are usually too cold for good washing results.

• Check water hardness. If water is hard, use a water softener. If water is medium to hard, and you use a non-phosphate detergent, use a water softener. Your city’s water department can help you determine your water hardness.

• Check for stains and heavy soil. You will need to pre-treat with a liquid detergent, granular detergent paste or a pre-treating aid.

• Check the amount of detergent needed based on the product and washing machine capacity. As a general rule, use 1½ times this amount.

• Dissolve granular detergent in warm water before adding to the washing machine.

• Fill washer with cold water, add the detergent in liquid form, agitate a few seconds, then add clothing items.

• Wash longer. Additional wash time is needed for the best soil removal.

More Ways to Save Washing Energy

Consider the following suggestions for saving additional energy:

• Wash early in the morning or late in the evening when power usage is low.

• Use short wash cycles on lightly soiled clothing.

• Wash only full loads.

• Set the correct water level for the amount of clothes you are washing.

• Pre-soaking and then washing saves energy as compared to having to wash twice in order to get the clothes clean.

Sorting

Careful sorting of clothes is essential if you want a clean, lint-free wash. It is important to sort clothing according to:

• color.

• amount of soil.

• fabric type.

• tendency to lint.

Reading Clothing Labels

By law, your clothes must be identified by fiber content and must have permanent care labels. For best results, carefully follow care labels. This will prolong the life of your clothing.
Look at several care labels. You will notice that hot water is rarely recommended, because many of today’s fabrics and finishes are heat-sensitive.

**Ways To Save Drying Energy**

Consider the following ideas for conserving energy when drying clothing:

- Wash and dry clothes consecutively while the dryer is warm.

- Separate loads into lightweight and heavyweight fabrics.
- Select the correct setting for fabric type.
- Avoid overdrying, which results in wasted energy, wrinkles, and static.
- Avoid overloading, which results in wrinkles.
- Dry only full loads, when possible.
- Drip-dry clothing by hanging in the bathroom or laundry area, when possible.
- Keep dryer lint screen clean.

- Keep outside exhaust clear.
- Line dry clothing, when possible.

Line drying is ideal for items that do not require ironing. The fresh, clean smell of line-dried towels and sheets is appreciated by many people. However, some prefer the softer feel a dryer gives. Personal preference should always be considered. Little or no energy is saved if line-drying wrinkles must be removed by ironing.

Consider both time and energy used when deciding whether to line-dry or use the clothes dryer.

**Some Final Thoughts on Saving Energy**

- If a garment requires ironing, remove from the dryer or clothesline and iron while damp.
• Since steam will remove wrinkles in many fabrics, hang clothes in the bathroom while showering or bathing.
• Promptly hang up clothing when removed from dryer to reduce the possibility of excessive wrinkling that will require pressing.

Brush garments to remove surface soil.
• Remove spots and stains before laundering.

Stain Removal

Stain removal is one of the biggest problems in the care of clothing. Stains need to be treated and removed before laundering, since washing sometimes will “set” the stain. Be aware that some stains cannot be removed.

Today, it is important to extend the clothing dollar and to save on the use of energy. Learning to promptly and correctly remove stains will result in fewer garments that will need to be discarded.

In order to be successful in removing stains, you will need to follow these general points:
• Identify the stain.

• Identify fiber content of garment.
• Treat immediately (fresh stains are easier to remove).
• Test stain remover product on an inside seam, hem or facing. Be sure that it does not change the fabric’s color or damage the fabric.

• Follow directions for using the stain remover.
• Blot or scrape off excess stain.
• Push stain out, not in.
• Work carefully.
• Never use hot water on an unknown stain.
• Take garment to your dry cleaner if the stain is large or stubborn.
• Many stains can be removed through regular washing.

An important factor in being able to remove a stain is in knowing what the stain is.
• Smell it and try to identify the odor.
• Look at its color and appearance.
- Feel it to check the texture.

There is a standard procedure to use in removing those stains you can identify.
- Use a soft white cloth or white paper towel under the stain to serve as a blotter.
- Place right side of garment to blotter.

- Work on the wrong side of the stain to push it out.

- Sponge lightly with a clean, soft, white cloth.
- Frequently move to a clean area on the blotter.

- Work, with a gentle brushing motion, from the center outward.
- Work on a small area.

What can you do if you have a stain that you cannot identify? Sometimes you can remove this "unknown" stain. Always be sure to carefully follow the directions for using stain removal products and test them on an inside seam or facing of the garment. Listed below are the steps to try:

1. Soak stain in cold water for at least half an hour.
2. Rub detergent (liquid; or paste of granular) into stained area. Let stand at least half an hour. Rinse.

3. Launder, using bleach (if care label indicates garment can be bleached).
4. Soak in a pre-soak the recommended amount of time.

5. Use hottest water possible (check care label) and launder. Line dry garment.
7. As a last resort, try a color or rust remover.
After attempting to remove a stain, a “ring” may appear around the area. Light- and solid-colored and smooth fabrics “ring” most frequently. It is caused by:

- a residue from the stain.
- an accumulation of fabric finishes that move out as the solvent spreads along the yarns.

You can prevent the ring from forming by:

- using the stain remover sparingly.
- frequently moving the garment to a dry, clean spot on the blotter.

If a ring appears, brush lightly from center out.

Have you ever had the experience of spots showing up on a garment after removing them from the dryer or from storage? There is a reason for the “invisible stains”.

- When fruit juices, sugared coffee or tea, or soft drinks are spilled on a garment, they may dry and disappear. However, the sugar is in the fabric. Heat causes the sugars to become a yellowish/brownish stain. Remember to flush these spills quickly with cold water if the garment is washable.
- A greasy stain (like mayonnaise), particularly on a polyester garment, may also be a yellowish-brown color.
- Pouring liquid detergent or fabric softener directly onto clothing without diluting.

Some garments require dry cleaning, as indicated on your care label.

- Always brush these garments after wearing.
- Remove wrinkles and freshen by hanging in the bathroom while you take a hot shower.
- Always tell your dry cleaner about any stains. The dry cleaner needs to know what the stain is and how you have tried to remove it.

Sometimes, dry cleaners can remove stains that you cannot.

Remember:

- Always follow product directions.

Read care labels on garments.

- Treat stains immediately.
- Realize that some stains cannot be removed.

It is true that the hotter the water, the cleaner the clothes. However, many of today’s fabrics cannot be washed in hot water, because they are heat-sensitive. The colder the wash water, the more difficult it is to have clean clothes. There is a place for hot, warm, and cold water washings. Follow the directions on the garment’s permanent care label. You can use cooler water temperatures than recommended, but not hotter ones.

The most important factors to consider in selecting water temperature are:

- type of fabric.
- color of fabric.
- type of soil.
- amount of soil.
By using a warm water wash and cold water rinse (instead of hot wash/warm rinse), you can reduce energy use by almost 50 percent. When possible, use a cold water wash and rinse for greater savings.

Conserve energy by laundering clothes right the first time. If the clothes must be re-washed, energy is wasted.

**Common Stains**

Listed below are some common stains for teenagers:

**Ball Point Pen**—Sponge with rubbing alcohol or spray with hair spray. Rub with detergent. Launder garment.


**Catsup**—Scrape. Sponge and/or soak in cool water. Rub with detergent. Launder garment.

**Chewing Gum**—Rub with ice to harden. Scrape. Let soak in heavy duty detergent and grease solvent overnight. Lift off. Launder.

**Chocolate**—Sponge and/or soak in cool water. Rub with liquid detergent. Rinse. Let dry. Use spot remover to remove greasy stain. Launder garment.

**Cosmetics**—Dampen stain. Rub in detergent until suds are thick and outline of stain is removed. Use spot remover to remove greasy stain. Launder garment.

**Cream, Ice Cream, Milk**—Sponge and/or soak in cool water. Rub in detergent. Let dry. Use spot remover to remove greasy stains. Launder garment.

**Deodorants, Anti-Perspirants**—Rub with detergent. Launder garment. Restore color with ammonia (new stains) or vinegar (old ones). Rinse.

**Fingernail Polish**—May be impossible to remove! Sponge with nail polish remover, except on acetate. Let dry. Rub with detergent. Launder.

**Grass**—Sponge and/or soak in cool water. Rub with detergent. Launder garment. If stain remains, sponge with rubbing alcohol (if safe for fabric).


**Mayonnaise**—Soak in cool water. Rub in detergent. Rinse. Dry. Use grease or cleaning solvent to remove greasy stain, if needed. Let dry. Launder garment.

**Mud**—Brush off after drying. Sponge and/or soak in cool water. Rub with detergent. Launder garment.
Mustard—Rub in detergent. Rinse. If stain remains, soak in enzyme pre-soak. Launder garment.

Perfume—Sponge and/or soak in cool water. Rub with detergent. Launder garment. If safe for fabrics, sponge with rubbing alcohol.

Perspiration—Rub with detergent. Launder garment. If odor remains, rub in deodorant soap and launder again. If color changes, try to restore with ammonia (new stains) or vinegar (old ones). Rinse. Use grease solvent to remove grease stain.

Soft Drinks—Some of these stains are invisible after they dry but turn yellow with age or heat. This yellow stain may be impossible to remove! Sponge and/or soak in cool water. Rub with detergent. Launder. If stain remains, soak in oxygen bleach and hottest water safe for fabric. Launder.

c. From the wearable list, identify five garments that are the coolest/hottest for school wear. Explain why and relate answers to fiber, fabric, color, design and fit.

d. Look for care labels. How many garments have care labels? Which ones give complete information? Give an example of a poor and a good care label.

e. Make a list (according to priority) of clothing needs for summer (or winter). Give specific reasons why these additions are needed to your wardrobe.

Project Requirements

The emphasis in Level III is on learning to care for clothes while saving energy. Place your work in a notebook.

Wardrobe Planning for Dressing Cooler or Dressing Warmer

Do Activity 1.

1. Do a wardrobe inventory plan for dressing cooler (or warmer) by answering the following questions:
   a. Make a list of wearable clothes that are cool (or hot).
   b. Make a list of wearable clothes that are intended for summer (or winter) wear, but are hot or cool. Explain why.

2. Visit a sportswear department or department store. Select clothing that will feel cool/warm while wearing. Review the information presented in Levels I and II. Include outfits for the following:
   - bicycle riding
   - going to school
   - going to the beach
   - sleeping
   - watching TV
Be sure to check the clothing labels. Apply what you have learned about fiber (natural versus man-made), color, texture, and design.

Share what you have learned about dressing warmly, dressing coolly, or clothing care by giving a talk or demonstration. Help others learn from your experiences.

**Learn About Laundry Products**

Do Activity 1 or 2.

1. Borrow 1 cup of detergent from at least three individuals (your parents, relatives, or neighbors). Try to have one liquid and one granular, one phosphate and one non-phosphate detergent. Do the following experiments:
   a. Place 2 tablespoons of each detergent in a quart jar, add 2 cups of cold water. Did both dissolve? Now add lid and shake. Did both dissolve? Describe what happened.
   b. Do the same experiment using warm water.
   c. Do the same experiment using hot water.
   d. Record name of detergent and percentage of phosphorus in the product. (If the detergent contains phosphorus, it will be a phosphate detergent.)
   e. Place a soiled (rub in a little dirt) spot on two pieces of light colored fabric. Then place one piece of soiled fabric into each solution. Shake. Remove fabric. Rinse with cold water. Compare cleaning results. Rate the products. Be sure to keep a piece of fabric to use as a control. Also, you will need to record the fiber content. Mount fabric. Give explanation and result of experiment.

2. Do a comparison of a detergent and a soap for cleaning the following stains:
   a. mud
   b. catsup
   c. blood
   d. grease

   Record brand of detergent and soap used.

   Do a comparison of a phosphate and a non-phosphate for cleaning the same four stains. Record procedures used. Give an explanation of what occurred. Identify the one that did the best job of removing the stain. Give evidence to support.

**Learn About Laundry Additives**

Do Activity.

Select two laundry additives you want to learn about:

- bleach
- fabric softener
- water conditioner
- pre-soak
- pre-wash

Describe the purpose of the additive. Experiment using the two products.

- Correctly and incorrectly adding the fabric (simulate a load of clothes using swatches of fabric).
- With and without detergent.

Read the label on at least three brands. Record the similarities and differences in the product. Record the correct procedure for using the two laundry additives.

**Stain Removal**

Do Activity.

Rub or spill stain onto three different fabrics (fiber content should be different, plus use at least one woven and one knitted fabric). Cut fabric sample in half. One half will be your control fabric to use for comparison. Record:

- stains.
- fiber content of fabric.
- products used to remove.
- in detail, what you did, what happened, and results.
- mounted fabric swatches (control fabric and one you stained and have attempted to clean).
- if unsuccessful in removing the stain, try another method.

**Project Requirements**

**Wardrobe Planning for Dressing Cooler or Warmer**

Complete Activity 1 and 2.

**Learn About Laundry Products**

Do Activity 1 or 2

**Learn About Laundry Additives**

Do Activity.

**Stain Removal**

Do Activity.

**Show and Tell**—at least six other persons.

Give—at least two demonstrations and talks.
Project Report
Year ___

Name ____________________________________________________________

Route or Street Address ____________________________________________

City and State __________________________ Zip Code ____________

Parent's Signature ________________________________________________

Age ________ Grade in School ______ Year in 4-H ________ Year in this Project ______

**ATTACH ADDITIONAL PAGES, IF NEEDED**

What did you learn doing a wardrobe inventory? ___________________________

Why are some garments cool? __________________________________________

Why are some garments warm? _________________________________________

What makes a good care label? ________________________________________

What additions to your wardrobe are needed? _____________________________

What did you learn about stain removal? ________________________________

Give one example of stain removal. _____________________________________

What did you enjoy most about this project? _____________________________

What was the most difficult? _________________________________________

How did you help others? ____________________________________________
What demonstrations (D), exhibits (E), and/or talks (T) did you give?

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**4-H Story.** Write a story about this project. Include why you took the project, what you learned, problems you had, and what was the most fun.

**Attach report of activities**

Prepared by: Nadine Hackler  
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