

# 1 Appendix

Haan Crafts FCS Lesson: Textiles Testing

## Formative Assessment

**Teacher Directions:** Using constructive critique, ask the following questions. Students should use descriptive answers.

Which piece catches your eye? Why?

Which piece had the best hand? Explain what "hand" means in textiles.

Which creation was hydrophilic or hydrophobic? Explain what "hydrophilic and hydrophobic fibers" mean in textiles.

Did any creation have luster? Explain what "luster" means in textiles.

Did you feel that any creation was stain repellent or stain resistant? Explain what "stain repellent" or "stain resistant" means in textiles.

What do you think your creations have to do with textiles and fabric testing?

## Introduction

**Teacher Directions:** Ask the following questions to introduce Textiles Testing to the students.

Why do you think we are going to test the fabric?

What purpose in your life and the lives of others do you think this lab has?

What do you anticipate we will be doing next?

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### Activity 1

**Directions:** Fill out the table below with the appropriate information given by the teacher. When completing, make sure to write a description that will help you remember. You do not need to write the exact definition. Hand refers to the touch. Please include what you feel when you pick up the fabric. Lastly, complete a drawing, print out a small picture, or prepare a swatch of fabric for the last part of the table shown below.

#### Classifications of Generic Fibers:

Name: Cellulose

Description	Hand	Picture or Swatch

Name: Protein

Description	Hand	Picture or Swatch

Name: Synthetic

Description	Hand	Picture or Swatch

Name: Mineral

Description	Hand	Picture or Swatch

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#### Classifications of Natural Fibers:

Name: Cotton

Description	Hand	Picture or Swatch

Name: Linen

Description	Hand	Picture or Swatch

Name: Silk

Description	Hand	Picture or Swatch

Name: Wool

Description	Hand	Picture or Swatch

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## Classifications of Manufactured Fibers:

Name: **Synthetic**

Type: Acrylic

Description	Hand	Picture or Swatch

Type: Polyester

Description	Hand	Picture or Swatch

Name: **Regenerated**

Sub-Type: Acetate

Description	Hand	Picture or Swatch

Sub-Type: Rayon

Description	Hand	Picture or Swatch

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## Activity 2: Summative Discussion Questions for Each Test

### Control Sample & Appearance Test:

Question	Answer
What general statement can you make about the RESILIENCY (crease recovery) of NATURAL FIBERS? What about SYNTHETIC FIBERS?	
Which fabrics would you use in a wedding dress? Why?	
What types of clothing could be made from each of the fabrics? Home furnishings? Other uses?	
Which fabric would drape the best for a circular skirt?	

### Strength Test:

Question	Answer
Which fabrics were easier to tear when dry?	
Did any of the fabrics become easier to tear once they were wet?	
Did any of the fabrics become harder to tear once they were wet?	
How might the results of the STRENGTH TEST affect the care or cleaning of a garment made with the same fiber?	

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## Absorption Test:

Question	Answer
Which fabrics absorbed the water into the fibers (hydrophilic) of the fabric?	
Which fabrics demonstrated WICKING?	
Which fabric allowed the water to spread over the largest area?	
Which characteristic - hydrophilic or hydrophobic - would make a fabric dry faster?	
Which characteristic - hydrophilic or hydrophobic - would you want in your shirt on a hot day?	
Absorbency is also a key factor in static electricity, since moisture will conduct or bleed electrical charges away. Which of your swatches would be least likely to have static electricity? Which of your swatches would have the most static electricity?	
Why is the amount of water absorbed by a fabric important?	

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## Stain Resistance Test:

Questions <u>AFTER</u> Steps #1-16	Answer
Which fabric swatches had the worst soda (sugar-based) stains? What characteristic did these fabrics have in common?	
Which fabric swatches had the worst dye stains? What characteristic did these fabrics have in common?	
Which fabric absorbed the oil stain and did not release it (OLEOPHILIC)? Why might this happen?	
What effect did ironing the samples have in the ability to rinse the stains out? Did the stain wash out the same or differently than the air-dried samples?	
The ink pen used to mark the squares is an additional stain; did any of the ink stains rinse out with the warm water?	

Questions <u>AFTER</u> Steps #18-21	Answer
Did the vinegar rinse have any effect on the soda (sugar-based) stains? Oil stains? Dye stains? Ink stains?	
Did the air-dried stains react differently than the iron-dried stains in the vinegar rinse?	
How will the outcomes of this test assist you in the laundry care of your clothing?	
Fabrics that are more absorbent may take stains and dyes more easily. Did you observe this result?	

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## Heat Resistance Test:

Question	Answer
Which fibers were most affected by heat?	
How might the results of this test influence the way you launder, dry, or iron your own clothing?	

## Thermoplasticity Test:

Question	Answer
Which fabric was THERMOPLASTIC?	
Laying the POLYESTER sample flat, does one side of the folded rectangle look shinier than the other? Where the iron touched the POLYESTER on the one side of the fold would have flattened the fibers, making them appear shinier. The other side touching the ironing board would remain unaffected.	

## Solubility Test:

Question <u>AFTER</u> steps #1-16 (PART #1)	Answer
Which fibers did the bleach affect, by either dissolving or becoming mushy?	
What fiber classification do these fibers have in common?	
Which fabric's colors were affected or changed by immersion in the bleach?	
What is chlorine bleach used for?	



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Would you use bleach on all fibers? Why or why not?	
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Question <u>AFTER</u> steps #1-7 (PART #2)	Answer
Which fibers were most affected by the acetone solution?	
Why do you think the acetone would affect the fibers in this manner?	
Name one common use for acetone.	

**Burn Test:**

Question	Answer
What are the differences between the way the NATURAL FIBERS and the SYNTHETIC FIBERS burned?	
What are the similarities between the NATURAL FIBERS and SYNTHETIC FIBERS?	
Thermoplasticity is a process where the fibers become soft and eventually melt when heated. Which fibers exhibited this characteristic? Did this match the THERMOPLASTICITY TEST?	
Why do you think the BURN TEST cannot be used as the sole test to identify a fabric?	
If you are having a barbecue with an open flame, should you wear lightweight, loose fitting clothing or a more closely fitted, medium-weight garment? Why?	

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## Mystery Fabric:

Question	Answer
Be prepared to discuss the results of each of the fiber tests to support their conclusions of the fiber content of the MYSTERY fabric.	

## After Lesson Classroom-to-Community Connection

**Teacher Directions:** Review the following questions from the formative assessment. Talk about the differences between each discussion with your classroom.

Now that you have completed the fabric test, why do you think we tested different types of fabrics?

What purpose in your life and the lives of others do you think this lab has?