

The Fabric of Reality

MICROSCOPE
LESSON 4

Did you know that we use plants, animals, plastics and even insects to make our clothes?

What You Need: Your pocket microscope, scissors, and a set of 4 fabric samples.

cotton - plaid rectangle

silk - narrow ribbon

wool - fuzzy triangle

polyester - wide ribbon

What To Do:

Study each cloth sample under the microscope. You can set them side by side to look at two at a time. To compare fibers, rough up the edges so the threads start to break up. Draw a line from each question to the type of cloth that is the best answer.

Which cloth ...

...has the thickest threads? •

• POLYESTER

... has the thinnest threads? •



... is most reflective under the microscope? •

• WOOL

... looks like it's made of little ropes? •



.. looks like it's made of bundled hairs twisted together? •

• SILK

... has thread made of the thinnest fibers? •



... has thread made of the thickest fibers? •

• COTTON



Where do they come from?

Cotton

Cotton comes from the fiber around the seeds of the cotton plant. Can you see how the cotton thread is made of these fine strands?

Silk

The ancient Chinese secret of silk-making:

Boil silkworm cocoons until they come apart into strands as thin as spider webs. Spin the strands into silken threads.

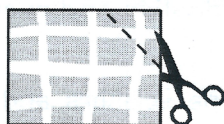
Wool

Wool is made of sheep's hair, sheared off in the spring and washed. The hairs are twisted together to make yarn that is used for weaving cloth.

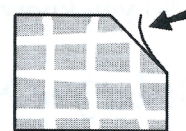
Polyester

Polyester is an example of an artificial cloth, produced by chemicals from a lab. Some of the first artificial cloths were invented as a cheap substitute for silk.

Snip a corner,
diagonally, off each
cloth rectangle.



Try to pull a thread loose from along the diagonal cut.



Draw a line from each type of cloth to the best description.

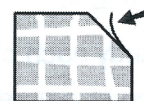
Cotton •

Silk •

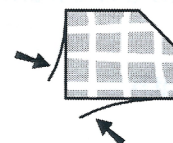
Wool •

Polyester •

- It's easier to pull threads loose from the diagonal cut.

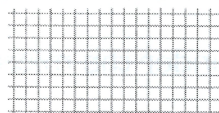


- It's easier to pull threads loose from the regular sides.



Why the difference?

Most cloth is cut along the threads of the weave. Some types of ribbon, are cut diagonal to the weave. This is to prevent unravelling.



Most Cloth



Cloth Ribbon

If you look carefully, you can see this difference through your microscope.

Exploration

Have you noticed that things can look very different under the microscope? Magnified fabric might look like popcorn, or plowed fields, or a checkerboard, or . . . ?

What To Do:

Using your pocket microscope, explore your home looking at various types of fabric. Try clothes, curtains, carpets or whatever. Fill out this chart as you go.

Cloth I Found

What it looks like (use your imagination!)

Cloth I Found	What it looks like (use your imagination!)
	
	
